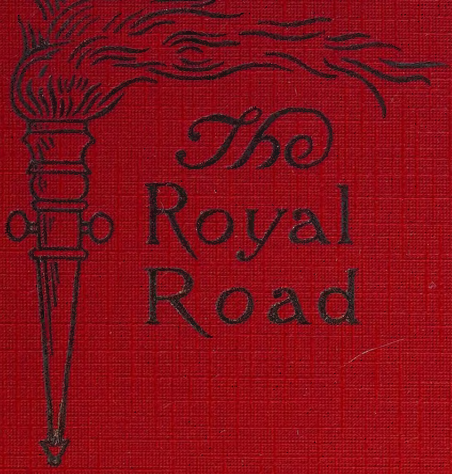

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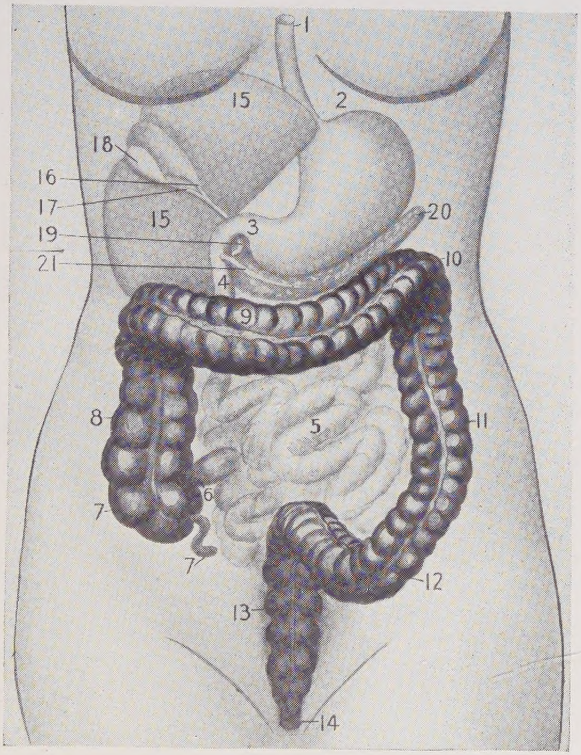
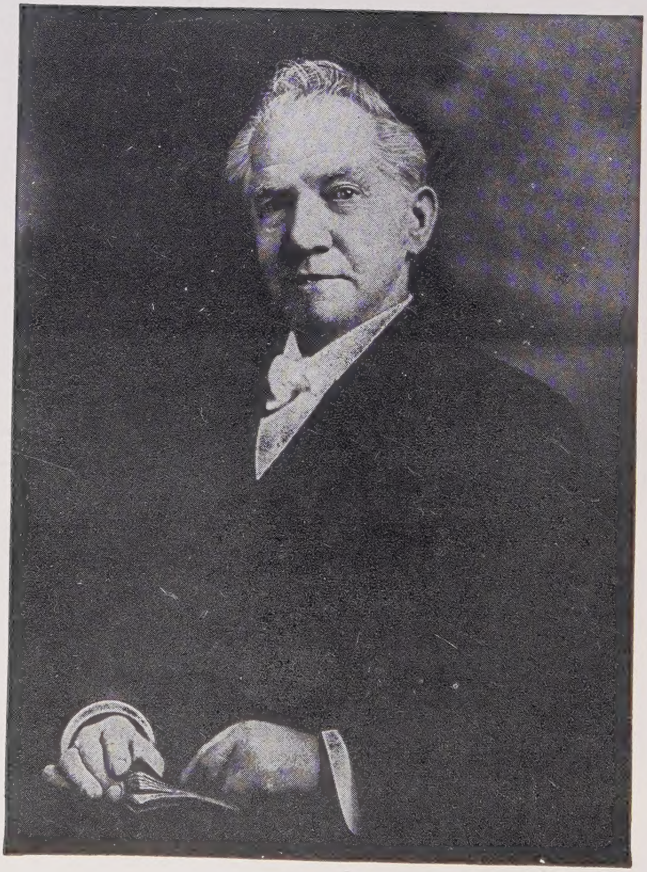


DIGESTIVE ORGANS OF MAN

See Page iii for Description of Diagram



Chas N. Symmes

The Royal Road

BY

CHARLES A. TYRRELL, M.D.

Founder of Tyrrell's Hygienic Institute. Originator of the "J. B. L. Cascade." Professor of Hygiene. Ex-President of the Eclectic Medical Society of the City and County of New York. Originator of the Improved System of Physical Exercises, etc.

THREE HUNDRED AND EIGHTIETH EDITION

COMPLETELY REVISED AND ILLUSTRATED

BY

MAJOR CHAS. G. PERCIVAL, M.D.

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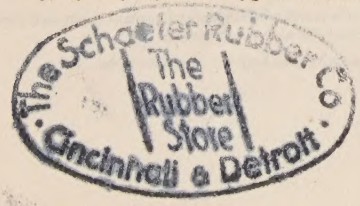

The following highly interesting and scholarly article appeared in the "New York Globe," of January 27, 1916:

THE COLONIC

By Dr. Frank Crane

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A colonic is a person afflicted with bacilli in the colon.

A striking phase of modern medical science is the amount of attention being devoted to the colon and its toxic contents.

The present age, and the one just passed, regarded alcoholic intoxication as its chief crime breeder, body wrecker, and soul destroyer. The coming age will address itself to the much more common, insidious, and deadly poison that comes from the colon.

The esoteric believer attributes all diseases of body and troubles of mind to error. The scientist knows that these little errors can be raised by the quart in the laboratory, and can propagate prodigiously in the human intestine.

The colon drunkard is harder to live with than the saccharomyces drunkard (alcohol).

Colonics break up happy homes as much as do alcoholics.

The man whose excretion is imperfect is irritable. He imagines other people irritate him because he cannot conceive how he can be naturally so mean.

Misunderstandings between parent and child, husband and wife, employer and employed, are due to constipation as much as to any other cause. People poisoned by colon bacilli are not their natural selves. They are as irresponsible as whiskey soaks. It is folly to punish them; they ought to go to a doctor.

A great deal of what we call Sin is due to what the physician calls stasis—an imperfect movement of the intestinal contents. A person may have the highest ideals, the purest aspirations, the noblest intentions; he may be a devotee of uplift literature, he may be instant in prayer and earnest of spirit, and yet wonder why gloom, depression, and fear constantly assail him, and he often as not does not realize that his trials are due to a clogged colon and not to any spirit of evil.

If he would get the colon bacilli out of his system his terrible temptations would disappear.

If you would know why domestic friction exists, why children are bad, why boys run away from home, why girls seem sometimes possessed of the evil one, why business relations become intolerable, why workmen cannot get along together, why there is dissension in the church, why perfectly sane and sober folks suddenly develop the most outrageous cantankerousness, the cause is not in original sin nor the influence of psychic current; it is more likely to be found in the vicious company of militant bacilli in the colon.

The colonic is the real "hunter for trouble." He craves trouble as a drunkard in his cups.

"The colonic," says Dr. Morris, "tries first one way and then another to get an irritated response to an irritating question or assertion. He eventually brings upon himself almost any calamity that he fears, through the influence of persistent suggestion."

The individual with his colon full of bacilli is conscious of a vague discomfort, and often takes to drugs, such as alcohol, morphine, or cocaine. He seeks relief much as one scratches the skin where it has been stung by nettles.

There is a vast deal of moral and religious work physicians might do if they would induce people to cleanse the colon as well as the body surface.

The first requisite to sanctity is to keep the intestines open.

DESCRIPTION OF THE DIAGRAM

ILLUSTRATING THE

DIGESTIVE ORGANS OF MAN

1. Esophagus or Gullet.
2. Cardiac end of Stomach.
3. Pyloric end of Stomach.
4. Duodenum.
5, 6. Convolutions of Small Intestines.
7. Cæcum.

7* Vermiform appendage of Cæcum, called the *appendicula vermiformis.*

8. Ascending Colon.
9, 10. Transverse Colon.
11. Descending Colon.
12. Sigmoid Flexure, the last curve of the Colon before it terminates in the Rectum.
13. Rectum, the terminal part of the Colon.
14. Anus, posterior opening of the alimentary canal, through which the excrements are expelled.
15. Lobes of the Liver, raised and turned back.

16. Hepatic Duct, which carries the bile from the liver to the Cystic and Common Bile Ducts.
17. Cystic Duct.
18. Gall Bladder.
19. Common Bile Duct.
20. Pancreas, the gland which secretes the pancreatic juice.
21. Pancreatic Duct, entering the Duodenum with the Common Bile Duct.

The illustration on page 2 of the Digestive Apparatus of man represents the organs of food digestion, especially the alimentary canal and glands connected therewith, and to the reader of this book, or to any student of anatomy, it will be found of invaluable service as a reference.

The diagram gives a view of the digestive organs from the ventral or front side, a proper study of which cannot fail to impress every intelligent being with the reverential deduction of the Psalmist that we are *"fearfully and wonderfully made."*

PREFACE

TO THE
THREE HUNDRED AND EIGHTIETH EDITION

In presenting the three hundred and eightieth edition of this work, it is a matter for profound gratification to be able to state that the valuable suggestions described in its pages has steadily increased in public favor since its introduction. 800,000 grateful people testify to its value, not only for the information given, but better still, for the results obtained. Truth must ever prevail, and this treatment being based on natural law (which is unerring), must achieve the desired result, which is the correcting of unnatural conditions by the aid of the Internal Bath and diet.

This edition is completely revised with the essential principles unchanged, and some slight departures from previously expressed opinions. For in the years that have elapsed since

the first edition saw the light, some notable advances have been made in rational therapeutics and dietetics, and no one can afford to lag behind the car of Progress.

The arrangement of the book has been still further altered, by adding several more parts, making ten in all, each part being devoted to a special phase of the general subject, thus simplifying it, and making its principles easier of application. Several new suggestions have been added to those that have appeared in previous editions.

While painfully conscious that the critically disposed may find something to condemn in its pages, the work is sent forth with the fervent hope that despite any defects it may possess it may, in the future, as in the past, prove the means of giving the public much valuable information in such a simplified form and language that it can readily be understood by all.

MAJOR CHAS. G. PERCIVAL, M.D.

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COLONIC CLEANLINESS.

A chapter from the book "Random Thoughts of a Busy Doctor and Comments on Medicine of Interest Only to My Colleagues in the Profession" by Royal S. Copeland, former Commissioner of Health of the City of New York and U. S. Senator from New York and late Mayor of Battle Creek, Michigan.—Constipation and fermentation in colon and lower bowel largely responsible for loss of efficiency, discomfort and lowered vitality.—In practice of medicine causes are too likely to be overlooked.—Failure to pay serious attention to correction of intestinal tract.—Safest way to cleanse bowel is to wash it with fine soft water, of course. 164

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The Royal Road

PART I.

The True Cause of Abnormal Conditions.

Health is such an inestimable blessing, that the individual who shall devise means to preserve it, or to restore it, when lost, is deserving of all the thanks and honors that a grateful community can bestow. Unfortunately, there are very few who estimate life at its true value, until they are confronted with the grim destroyer, Death. No one can fully appreciate the priceless blessings of health until they feel that it has slipped from their grasp. The oft quoted phrase, "Health is Wealth," is truly a concrete expression of wisdom, for without the former, the latter is well nigh an impossibility. But its interference with the activities of life

is one of the least evils of sickness, for *perfect health* is the very salt and spice of life; without it, existence is "weary, stale, flat and unprofitable."

But let none despair, for it is our purpose to give suggestions to those who enjoy the blessings of robust health to help them preserve it indefinitely, and how those who have through constipation lost it may regain it—with excess of vigor, and once more feel that life is *indeed* worth living.

The great need of the present day is adequate instruction in physiology and hygiene, that humanity may not only know how to secure the restoration of health, when lost, but by attention to physiological and sanitary laws may retain good health indefinitely. The body is the theatre of constant change. The processes of tearing down and building up proceed without intermission during life. During every moment of life, waste is being formed by the destruction of tissue, and this effete material must be promptly removed if the individual would enjoy health. Nature has provided adequate means for the removal of

these substances which are valueless to the economy, the retention of which obstructs and irritates the complex mechanism of the system, the principal avenues for its expulsion being the lungs, the skin, the kidneys, and the intestinal canal.

The latter is infinitely more important than the others, since by it the waste products of digestion are expelled. If it fails to promptly fulfill its office, every vital function is interfered with; and the waste is re-absorbed directly into the circulation, redepositing in the very fountain of life matter which the system has thrown off as worthless. Should the system be exposed to a chill while in this condition, a congestion of the surface excretory vessels takes place; and practically the whole work of elimination is thrown upon the already hard-worked kidneys, frequently resulting in uræmic poisoning and death.

The presence of a grain of sand in a watch will retard its movements, if not arrest them altogether. What, then, must be the result of an accumulation of impurities in the physical system? The finely adjusted balance that is

capable of weighing the thousandth part of a grain is carefully protected under a glass cover, for even impalpable dust would clog its movements. Reflect, then, upon the amount of friction that must be perpetually going on in the human organism owing to the retention of waste matter! And since not even the most cunning product of man's handiwork can compare with the intricate mechanism of the body, the importance of eliminating the waste becomes manifest. Here, in a nutshell, lies the predisposing cause of many conditions.

Let us now consider how the retention of waste affects the system—how the deleterious effects are produced. There are three factors at work in this process, mechanical, gaseous and absorptive. We will first consider the mechanical.

Nature has beautifully apportioned the space in the abdominal cavity, each part of the viscera having ample room for the performance of its special function, but any abnormal increase in size of any part of the contents of the cavity must necessarily create disturbance. Now, when the food leaves the stomach, where

it has been churned into a pulpaceous mass, it passes into the short duodenum, or first part of the small intestine, where it receives an augmentation of liquid material from the liver and pancreas; consequently, when it reaches the remainder of the small intestine, where the greatest amount of absorption takes place, it is in a well diluted condition. During its passage through the small intestine, the nutrient portion of the food is abstracted from it by the villi (small hair-like processes) with which the small intestine is thickly studded, so that at the end of its journey of about twenty-two feet (if digestion is normal), most that is of food value to the organism has been appropriated—the remainder being refuse. The waste product passes into the colon, or large intestine, and should be promptly expelled. If prompt expulsion does not take place, this is what happens: The fluid portion of this semi-liquid waste is re-absorbed through the walls of the colon directly into the circulation. This process known as constipation goes on from day to day, week to week, month to month, until it not infrequently happens that the

colon becomes distended to several times its natural size. Instances are on record, where these abnormal accumulations of fæcal matter in the colon have been mistaken for enlargement of the liver, and even pregnancy. A surgeon in London has a preparation of the colon measuring some twenty inches in circumference, containing three gallons of fæcal matter, and even larger accumulations have been reported. The foregoing instances are, of course, exceptional. It is impossible to estimate the amount of evil caused by an engorged colon monopolizing two or three times its allotted space in the abdominal cavity, crowding and hampering the other organs in their work.

But the effects of direct mechanical pressure are not the only ones. Undue retention of food, with consequent fermentation may oftentimes occur; while the irritation, due to pressure on the nerve terminals by the distension, and by the encrusted matter adhering to the intestinal wall, may be harmful.

The effects of gaseous accumulations in the alimentary canal are not thoroughly under-

stood at present—that is—the pathological effects. The more direct effects, as manifested in abdominal distension, and the terrible distress that frequently follows, are unfortunately, but too well known. The reader does not need to be told that during the decomposition of organic substances, gases are evolved, and no matter where the process goes on, the results are always the same. Owing to the causes previously mentioned, the intestinal canal usually offers special facilities for the production of gases, owing to the retention of partially digested food, in a medium highly favorable to fermentation.

This liquid refuse in the colon is composed of substances for which the system has no further use—it has rejected them; consequently they are foreign bodies, and as such, should be quickly eliminated. It is known now, that water and part of this decomposing substance may be absorbed, carrying into the system soluble poisonous or decomposed matter which may be present.

Having shown that the average colon is a fertile breeding ground for all kinds of germs,

bad as well as good, it may be interesting to explain how part of this waste might be conveyed to the various organs of the body.

We have in our bodies a system of canals called arteries and veins, having their head at the heart, which is the main pump that keeps the blood in motion. The arterial circulation consists of those channels which convey the blood—supposed pure blood—away from the heart to the different parts of the body, loaded with the life-giving principle of sustenance, invigoration and heat, while the veins or venous circulation conveys to the heart and lungs the impure blood.

Now, in the blood, as it courses through our bodies, are myriads of little discs called corpuscles; these are what give the blood a red color. There are also a smaller number of white corpuscles, that are known as phagocytes, whose mission is to destroy micro-organisms that are prejudicial to life. In order that you may know their use, we, for convenience sake and to make our meaning better understood, will call them little soldiers. These little warriors are continually sailing

through our bodies, hunting for germs of disease or waste, that they catch and destroy.

Now, suppose we take a violent cold, with a closing of the pores of the skin, and that at the same time the colon is engorged, two of the most important outlets for the filth and decayed matter of our bodies are closed up—for the life of our bodies is one continual process of building anew and tearing down; these two most important sewers are now closed. These little white soldiers may now have their hands full, catching germs that may find their way into the tissues or blood stream.

When such conditions occur, our first thought is, avoid constipation; for we know a clean colon is nature's first aid in fighting any abnormal condition.

The importance of a clean colon has not received in the past the attention which it deserves.

The muscular fibres of the intestines are circular and longitudinal. In the large intestine the longitudinal fibres are shorter than the tube itself, which length permits the formation of loculi (cavities). These become the seat of

fæcal accumulations. It is undoubtedly a fact that the loculi of the colon may contain small fæcal accumulations which may extend over a considerable period of time.

The most common parts of the colon to become enlarged are the sigmoid flexure and the cæcum (see diagram in beginning of book), but accumulations may occur in any part of the colon. The ascending colon is much more often filled in life than we are led to believe; indeed, it may be said that chronic accumulations are oftener to be found in the ascending than in the descending colon. This is due partly to the fact that the contents of the colon have to rise in opposition to gravity, and partly to the semi-paralyzed condition of the muscular coat of the colon through inactivity. When the accumulations are large, the increased weight of the colon tends to displace it; and if in the transverse colon, that portion may be depressed, even into the pelvis.

The mass may be so enormous as to press upon any organ located in the abdomen, interfering with its functions; thus we may have pressure on the liver that arrests the flow of

bile; or, upon the urinary organs, hindering their functions.

Of course, such excessive accumulations occur only exceptionally, and it is not to these that attention is particularly drawn, because when they are so excessive, a physician should be consulted.

It is to the minor accumulations particularly, that we wish to draw attention—the accumulations that we see in the majority of patients who visit our offices.

Daily movements of the bowels are not always evidence that the colon is not impacted. The diagnosis of fæcal accumulations is facilitated by inquiring as to the color of the daily discharges. A black or a very dark green color almost always indicates that the fæces have remained in the colon for too great a length of time. Prompt discharge of food refuse is indicated by more or less yellow color. In fact every important information of practical significance can be derived from an examination of the fæces, in both their macroscopic and microscopical aspects. We have learned that it is highly important for us to make a

thorough and complete routine stool examination in every case that comes to us for personal treatment.

The attention, therefore, that is given today to bowel elimination is rational and founded on a well-deserved realization of the dangers of constipation. The great difficulty has been not only to increase bowel action but to remove and correct the underlying causes of chronic inertia or fæcal retention.

What We Can Detect From a General Inspection of the Stool.

Normal Feces.

Yellow to dark brown; usually sausage-shaped and definitely formed; soft in consistency; amount in 24 hours varies from 3 to 7 ounces.

Distinctive Feature—Definitely formed.

Acute Enteritis (Diarrhea).

Varies from brown to green, the latter frequent in young children; discharges usually semi-liquid or soup-like; may become watery, and number 6 to 20 in 24 hours.

Distinctive Feature—Semi-Liquid.

Blood from Stomach, Liver or Small Intestine.

Stools containing blood from above colon are black or "tarry" unless evacuations are diarrheal, when blood may be red and fresh.

Distinctive Feature—Black Color.

Blood from Colon or Rectum.

Blood from lower portion of canal is usually bright red and on the surface of the stool. If piles and fissure can be excluded, presence of pus with fresh blood points to cancer.

Distinctive Feature—Fresh Blood.

Jaundice.

Deficiency of bile due to obstruction from catarrhal jaundice or gall-stones produces clay-colored and putty-like stool; markedly greasy or fatty; similar stool may indicate pancreatic disease.

Distinctive Feature—Clay color.

Mucus Colitis (*Intestinal Catarrh*).

Mucus occurs on stool as grayish white clumps; or it may be expelled as membranous casts, as strings, or as sago-like bodies in masses similar to frog spawn; if very liquid, it may make fæces semi-fluid.

Distinctive Feature—Mucus Present.

What the Microscopical Examination of the Stool Shows.

Meat Diet.

Muscle fibres; connective and epithelial tissue shreds; many putrefactive and other bacteria.

Vegetable Diet.

Vegetable fibres and cells; starch granules; but with putrefactive organisms markedly less than with a meat diet.

Milk Diet.

Marked absence of putrefactive organisms, and food debris, but with harmless milk bacteria in abundance.

Acute Diarrhea.

Contains various fibres and cells of undigested food; some epithelial and tissue shreds; numerous bacteria; mucus shreds; and white and red blood cells.

Mucus Colitis.

Mucus and epithelial shreds; numerous bacteria; undigested food fibres and cells; also white and red blood corpuscles and pus cells.

Amebic Dysentry.

Examination shows epithelial and mucus shreds, with amebae. Numerous blood corpuscles; also various bacteria.

Jaundice.

The microscopic examination of the fæces in jaundice shows fat and oil globules, and tufted crystalline masses of the calcium and magnesium salts of the fatty acids.

PART II.

Rational Hygienic Suggestions.

Fresh air, sunlight, pure water, diet and exercise are the great curative agents provided by Nature, and the physician's aim, no matter to what school he belongs, is to remove as far as possible all existing impediments, and to see that the hygienic conditions are made as favorable as possible. For the rest, Nature, the marvellous builder, will, in her own mysterious way, build up fresh tissue, and slowly but surely, wherever favorable, repair the ravages made by abnormal conditions.

Whether for the preservation of health, or the treatment of constipation, when present, the chief thing is to keep the colon clean.

If the principal drain in a dwelling becomes choked, what is the consequence? The noxious gases generated by the accumulated filth having no outlet, are forced back into the building, making the atmosphere obnoxious to the

inhabitants. Deodorizing and disinfecting will simply be a waste of time and material, until the drain is cleared. The colon is the main drain of the human body, and if it be necessary, for sanitary reasons, to keep the house drains clean, how vitally important is it to keep the main outlet of the physical system free from obstructions.

Or, to use another homely illustration, when your coal stove has been run continuously for a long time, as a natural result it becomes clogged with cinders and ashes, causing the fire to burn badly. You encourage it with fresh fuel, rake it and shake it but without avail—the accumulations of débris are too great. You remove a portion, but its place is taken by more substance from above. At length you resort to the measure you should have employed at first—you "dump the grate" and start a fresh fire. The moral is obvious; dump the grate of the human system—in other words, empty the colon.

It has been previously shown that the colon is neither more nor less than a prolific hot-bed for the wholesale breeding of germs—mi-

crobes. Of course, there are harmless microorganisms as well as hurtful ones; in fact, a large proportion of them are beneficial rather than otherwise; but some of them are so intimately associated with various disorders that it is next to impossible to doubt their responsibility.

If microbes are introduced into the system, either by contact with sick persons, inhaling impure air in crowded public buildings, or breathing in the dust on ill-kept streets, there may be danger ahead; for if the recipient is not in a sound, physical condition, the microbes are apt to multiply, causing disorders in some form.

Of course, every one who breathes in the microbes of some particular disease does not catch it, or we should soon all be dead, but those who have not the resisting power of sound bodies to kill these germs before they have time to set up their peculiar inflammation, are apt to realize the evil effects, a week, a month, or even a year afterwards.

It is evident then that to keep our bodies healthy we must get the system into such a

sound, healthy condition that disease germs cannot obtain a lodgment in it.

It is evident that by thoroughly cleansing the colon, and keeping it absolutely clean, much can be done to keep the body healthy and keep the bad germs out.

The intelligent reader, recognizing the absolute correctness of the foregoing proposition, will naturally ask, "Can such a thing be accomplished, and how?" We beg to assure the reader, most emphatically, that it can, but not by the means usually employed. It is perfectly plain that the cleansing process cannot be effected by cathartics, for at the best, they only afford temporary relief (witness the growth of the cathartic habit), while on an impacted mass such as is commonly present in the colon, the influence they can exert is many times practically *nil.* The common experience of those afflicted with constipation is, that they commence with a laxative, gradually increasing the quantity and frequency of the dose, until it fails to act at all. Then they resort to a cathartic, with a similar experience, when it is exchanged for a more powerful one,

and then for another still more powerful, until at last, it becomes impossible to move the bowels without a powerful dose.

That this is no overdrawn picture many of our readers will bear witness, and our brother practitioners can amply corroborate the statement, for they fully recognize the vital importance of removing the waste from the system.

There is a simple and effective method of dealing with this trouble; of removing the accumulations, no matter how large they may be; of thoroughly cleansing that important organ, the colon, without the least demand upon the vital forces, and that is by

Washing It Out.

In plain English, cleanliness, especially *internal cleanliness,* is our suggestion to attain that condition which we are told is next to godliness, there is nothing equal to water—especially "hot water."

Strange, that such an obviously commonsense proceeding has not become more universal.

This method of internal cleansing is in

reality of ancient origin, as we have it on good authority that it was practised by the ancient Egyptians, who, it is believed, acquired their knowledge from observing a bird called the Ibis, a species of snipe. The food of this bird, gathered on the banks of the Nile, was of a very constipating character, and it was observed, by the earliest naturalists, to suck up the water of the river and using its long bill for a syringe, inject it into its anus, thus relieving itself. Pliny says this habit of the Ibis first suggested the use of enemas to the ancient Egyptian doctors, known to be the first medical practitioners of any nation, not excepting the Chinese. [See Naturalis Historia, Lib. VIII., Dap. 41, Hague 1518.]

Another writer, viz., Christianus Langius, says that this bird, when attacked with constipation, at some distance from the river, and not able to fly from weakness, would be seen to crawl to the water's edge with drooping wings and there take its rectal treatment, when, in a few minutes, it would fly away in full vigor of regained strength.

The question is often asked, and naturally

so, why this unnatural accumulation is in the colon? The horse and ox promptly obey the call of nature; they know no time or place, and are blessed with clean colons. So are the natives of Africa. But the demands of civilized life insist upon a time and place. Business, etiquette, opportunity, and a thousand and one excuses stand continually in the way, and nature's call is put off to a more convenient season.

How many people are not presentable to themselves or friends, owing to the putrid smell of their bodies, so that in polite society strong colognes and other perfumes are used. Show me a woman who girds her waist with corsets or any tight clothing, and we will warrant you that she can never enjoy perfect health. The special reason for this is, that the lacing comes immediately where the transverse colon crosses her body. Now, if the sigmoid-flexure becomes loaded, because of its folding upon itself, how much more will the transverse colon become clogged if unnaturally folded upon itself by compression from each side folding it, as demonstrated in some instances,

almost double the whole length, into two extra elbows, where it, if natural, is straight (see engraving on frontispiece). Many reasons have been given by physiologists and humanitarians why it is injurious for women to lace, but this reason outweighs them all. Wear the clothing loose, clean out the colon and heal it up, and life will be a continual blessing; for, if the main sewer of the body is closed or clogged, nature has but three other outlets; the capillaries or pores of the skin, the lungs in exhalation, or the kidneys. If the colon is clogged, the other outlets will be overworked and an unhealthy body may be the result.

The condition of the colon (the physiological sewer) having been demonstrated, does it need any argument to convince the intelligent thinker that the most rational and practical manner of dealing with this hot-bed of filth is to wash it out?

With us, it has passed beyond the theoretical stage, for we have in our office fully 15,000 letters from grateful patients who have used this process, under our direction, with the most astounding results; while tens of thousands of

gratifying messages have reached us from time to time; nor is the testimony in its favor confined to the laity, for hundreds of physicians (including some of the most prominent authorities) testify to the wonderfully beneficial results achieved by its use.

We now come to the most important feature of the subject—the means for putting it into practice, for it will readily be admitted that such an admirable and common-sense method of cleansing should have the most perfect means procurable for its application, but until the present time the available means have remained crude and undeveloped.

The most effective method of irrigating and cleansing the colon is the "J. B. L. Cascade," a mechanical appliance invented and perfected by the author, which completely rids the process of injection of all its objectionable features, and enables young and old, weak and strong, to use the treatment. It achieves the desired result far more effectively than any other known apparatus, with the least possible inconvenience to the patient, and yet so gently and easily that the operation, so far from be-

ing distressing or disagreeable, becomes a positive gratification.

One of the gravest objections to all the hitherto existing appliances was the construction of the nozzle, or tube, that is inserted in the body, and through which the water is conveyed. These are all (without exception) made with an aperture in the end, or extreme tip, the consequence being that a small jet of water is continuously directed upon one spot in the delicate and sensitive mucous membrane. With water at the necessary temperature this is a source of grave danger, and likely to result in serious injury. For little slits occur in the rectal lining, in which fæcal matter lodges, ultimately forming what are known as pockets, causing, first, irritation, then inflammation, and, finally, "proctitis"—chronic inflammation of the intestinal canal. The best authorities agree in condemning the direct jet, while rectal specialists regard it as one of their chief aids to income.

With these facts in view, the construction of our "injection point," or entering tube, engaged our special attention, finally, with the

result that a most successful means of overcoming this dangerous objection has been provided. Instead of the opening in the end, the tip is made absolutely solid, so that the impact of the entering water is not felt at all, while it is provided with six rows of perforations on the sides, through which the water is evenly diffused over the walls of the rectum, which is a most desirable thing in cases of rectal inflammation. It is also so constructed that the natural constriction of the sphincter muscles holds it firmly in position in the rectum, and while affording the water free passage into the colon, it prevents the escape of the fluid externally, thus rendering soiled garments impossible.

But the simplicity of the operation is one of its chief advantages, for the patient sits upon the appliance in ease and comfort while receiving the cleansing stream, and by following the directions the time occupied in the operation need not exceed fifteen minutes. The faucet is considered by experts as a most valuable feature, on account of the "dome" portion, which accurately fits the natural arch

formed by the limbs when the body is in the seated position.

Many people are accustomed to use the bulb and fountain syringes in a reclining position, and some physicians recommend the patient to kneel in the bath tub, with the body bent well forward; an irksome, disagreeable position. The theory is, that the water will flow into the body by gravitation, but they overlook the fact that the ascending and descending portions of the colon, being parallel in the body, the water, while flowing readily into the descending portions, would have to flow uphill in the ascending portions and by the time it reached there, the force would be exhausted.

The weight of the body furnishes greater force, which is proportioned to the size and bulk of the patient, but is not perceptible to him, on account of the solid construction of the tip of the "injection point," while the steady, uniform pressure exerted serves to distend the walls of the colon and thus liberates adherent matter. The great majority of people, however, use these crude appliances while seated over a vessel, which is decidedly injurious. By

reference to the diagram of the digestive organs it will be seen that the "descending colon," that portion which terminates in the rectum, is larger than either of the other divisions of that organ. In fact, its capacity (in the average adult) is about three pints, equivalent to three pounds. Now this weight, in a flexible organ like the colon, must cause a sagging down, exerting a serious strain upon its attachments to the abdominal wall, and by its pressure upon the sphincters will induce prolapse of the rectum. That is one reason why so many people find it almost impossible to receive enough water to make the treatment successful. When a physician, or trained nurse, is administering a high enema, it is a common practice to hold a folded towel against the rectum, to guard against this pressure and its possible results. The "dome" portion of the faucet (previously referred to) affords the desired support, automatically and effectually prevents any prolapse; while the handle of the faucet, projecting forward, between the limbs, may be manipulated with the greatest ease in controlling the flow of water; and, being

seated on a warm cushion, the patient experiences a pleasant, soothing sensation, which completely allays any nervousness.

The Cleansing Tonic should always be used as directed. The ingredients first act as a decided aid in loosening up the fæcal matter from the walls of the colon and then, when removed, the lining of the colon is clean and free to function as nature intended. This Cleansing Tonic is merely added to the water used in the Cascade. It is perfectly harmless, even though a hundred times the necessary quantity should be forced into the intestinal canal. The Cleansing Tonic is not alone a cleaning agent, for it possesses admirable tonic properties, which act upon the muscular coat of the colon and aid in securing its more normal action.

Defecation, or the expulsion of waste substance from the bowel, is accompanied by the contraction of the circular fibres of the said muscular coat, but when constipation has existed for any length of time, the accumulated matter adhering to the walls of the colon renders that organ partially rigid, hence the diffi-

culty of evacuation; consequently, through disuse, the muscles become to a certain extent atrophied, and require stimulation to resume their natural function even after the colon has been cleansed. It is largely owing to the use of this Cleansing Tonic that the "Cascade" has been so successful in cases of obstinate constipation, as by its use the intestine regains tone and power, and the parts are strengthened.

We unhesitatingly assert that if the colon be regularly cleansed by this means, bacteria and products of decomposition are expelled, thus eliminating one of the grave dangers and giving a quick relief that is so desired by all who feel the need of bowel action.

NOTE.

If the water is not readily expelled do not attempt to force it out by straining. Instead, flatten in the abdomen by forcibly contracting the abdominal muscles.

PART III.

How to Use It.

Having thoroughly cleansed the reservoir, the faucet should be shut off, a level tablespoonful of the Cleansing Tonic dissolved in a little warm water in a cup or glass and poured into the reservoir, which should then be completely filled with water as hot as the hand can comfortably bear; not to simply dip the fingers in and withdraw them, but so that you can immerse the hand and allow it to remain without discomfort. If tested with a thermometer the water should be from 100 to 105 degrees Fahr. Hot water is the best solvent for impacted fæcal matter, and, on the other hand, water below the temperature of the body may sometimes cause pain.

It is necessary that the reservoir should be absolutely full to insure the exclusion of air, as

its presence is likely to prevent the proper reception of the water.

For this reason it is advisable to solicit the bowels before taking the treatment, as, if even no fæcal matter is expelled, pent-up gases are frequently liberated.

The reservoir having been filled as directed, the "Cascade" should be laid down and the "injection point" screwed in. It is then ready for use. Being all ready, the J. B. L. Lubricant should be used freely on the "injection point." This tube is furnished with the Cascade and is simply to lubricate the passage and facilitate the admission of the "injection point." Then, standing in front of the seat on which the "Cascade" is lying (as if preparing to sit down), pass the left hand between the lower limbs and grasp the handle of the faucet, to guide the "injection point" into the rectum, and then carefully sit down upon the "Cascade." When the "injection point" has been completely introduced and you are comfortably seated, relax the muscles and allow the whole weight of the body to rest freely on the "Cascade," and turn on the faucet, partially

at first, then after a few seconds, turn it on fully and you will readily receive the water.

The most convenient place to use the "Cascade" is in the bathroom, placing it on the closet seat, or any firm seat, such as a wooden-seated chair. But take care to have a vessel at hand in which to discharge the contents of the bowel.

As soon as the faucet is turned on and the water begins to flow into the body, proceed with the following movements: Commencing in the right groin, stroke firmly but gently, right across the pelvis, or lower edge of the abdomen, to the left groin, then directly upward with the hands to a point just above the umbilicus, or navel, then straight across the body and down to the right groin. These movements are directly over and along the course of the colon, and if they are made gently but firmly, the water will be assisted on its course. A study of the diagram of the digestive apparatus at the commencement of the book will be of great assistance in enabling you to understand the reason for and the method of these movements.

It sometimes happens that after a small quantity of water has been injected there is a strong desire to expel it, which is sometimes due to nervousness, induced by the novelty of the operation. If this be so, shut off the faucet at once and resist the inclination, when, in a few moments, the desire will have passed away, then turn on the faucet again. Be sure to allow the full weight of the body to rest on the "Cascade," and have no fear. It is the weight of the body itself that furnishes the motive power, and to ease up the pressure defeats the object.

As soon as all the water has entered that you feel is possible to receive, turn off the faucet, rise from the "Cascade," sit over the closet, or vessel, and allow the contents of the bowel to escape. At the same time repeat the stroking movement previously described, but this time reverse it, commencing in the right groin, up, across and down to the left groin. These movements have a three-fold object; they assist the water in its passage backward and forward, thus shortening the time of the treatment; they force along the accumulated matter

in the colon with the current of water, and help to dislodge adherent matter from the walls of the colon.

As we proceed on the assumption that the colon is more or less impacted (which experience shows), we do not anticipate that more than two quarts will be received at the first treatment, but as the accumulations are removed by successive treatments, the capacity of the colon is increased, so that at the end of the second week enough should be received to almost fill the colon. The amount of water varies, of course, with the bulk of the individual, but the capacity of the colon, in the average well-grown adult, is about four quarts, but even in the case of a person below the average size, it may safely be assumed that three quarts of water are really necessary for a successful treatment.

Whenever pain is present during the treatment it is usually due to one of two things; either the water has not been sufficiently hot, or the reservoir has not been completely filled, but, if in spite of these precautions, pain should be present, it will be found advisable,

after a small quantity of water has been injected (say from a pint to a quart) to shut off the faucet, rise from the "Cascade" and expel it; then, upon returning to the "Cascade," it will usually be found that the cleansing of the lower portions of the bowel has removed the trouble. The same method of procedure holds good when there is any difficulty in injecting the water. In cases where pain is persistent, even though all precautions are taken (although such are extremely rare), a decoction of anise seed, made by steeping a tablespoonful of the seed in a pint of boiling water, added to the water used for flushing (omitting the Cleansing Tonic), will act as an anodyne on the intestine, and tend to subdue the pain.

The frequency with which the treatment is used will depend upon the nature of the trouble and the length of time it has existed. In the great majority of cases it is recommended to be used as follows when commencing the treatment: The first week use it every night; the second week every alternate night; after that use it twice a week, or as occasion seems to demand it. For the simple preservation of

health, twice a week will be found amply sufficient. After using the "Cascade" it will be found extremely beneficial to inject from a half pint to a pint of cool water and retain it. This will be found not only a valuable rectal tonic, but an excellent diuretic as well, as it will pass off by way of the kidneys, cleansing and purifying those organs.

The "Cascade" should not be used within three hours after eating a full meal, as, if both the stomach and transverse colon are distended at the same time they press upon each other, and the stomach, being the more sensitive of the two, nausea is likely to be produced; but although (with the above proviso) the treatment can be used with benefit at any period during the twenty-four hours, yet, just before retiring at night is by far the best time to take it, for several reasons. Firstly, it is usually the most convenient time for the majority of people. Secondly, it invariably induces a good night's rest; for no sleeping potion can equal its effects in that direction. Thirdly, night is Nature's repairing season, when she is busy making good the ravages of

the day—replacing the waste by building fresh tissue and by putting the system into a cleanly condition and purifying the blood current; at that season you are co-operating with Nature and may confidently expect, and will undoubtedly secure, the best results.

After using the "Cascade" it is quite possible that there may not be a movement of the bowels until late the following day. This must not be considered as evidence of constipation, but simply a lack of matter to discharge. In a perfectly natural condition of existence there should be at least two movements of the bowels during the day, but it must be remembered that the human system has acquired bad habits, and it will require some time before perfect conditions are re-established. If, however, from a half pint to a pint of hot salt water (teaspoon of salt to one pint of water) is sipped in the morning, a half hour before breakfast, it will stimulate the bowels to action, even though the "Cascade" had been used the night before, while its cleansing effect upon the stomach will assist the digestive functions in a marked degree.

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It may be accepted as a truism that success invariably excites envy, therefore, it is but reasonable that the astounding results that have attended this method of cleansing should have aroused a certain amount of antagonism. The hardy individual who dares to propose a new departure in the method of cleansing the colon must be prepared to hear his theories ridiculed, his system denounced, and, possibly, his motives impugned. Consequently, it is not surprising that the "Cascade" has some objections urged against it.

The first objection we are confronted with is, "it is not natural." We willingly concede that point, and will add that neither is an obstructed and engorged colon natural.

We are living (in a large measure) an artificial life. In his barbaric state man obeyed the calls of nature without regard to time or place, and it is safe to assert that under those conditions an obstructed colon was an unknown quantity. But in deference to the demands of civilized life we disregard Nature's calls and defer the response until a convenient

opportunity presents itself, and for this violation of natural law a penalty is inflicted.

An obstructed colon, therefore, being itself unnatural, man is obviously justified in using the brains that Nature has endowed him with to cleanse it. An artificial limb is unnatural, but would the same objection hold good that because a man has had the misfortune to suffer amputation, he must, therefore, limp through life on crutches, rather than use the mechanical substitute that man's ingenuity has devised?

Common sense teaches us, and experience has amply confirmed the teaching, that flushing is not only the easiest, but the most effectual means of accomplishing this purpose; and it is unmistakably the most harmless, inasmuch as we use Nature's most simple and effective cleansing agency in the process—pure water. Sickness is in itself unnatural, and until the system can be restored to its natural condition reason plainly shows us that we must cooperate with Nature and assist in removing these impurities from the system, a task which our disregard of her warnings has prevented her

from accomplishing. Cathartics simply excite the excretory processes, and stimulate Nature to a violent effort to expel them, the unnatural exertion being followed by a feeling of languor, for all purgative action is debilitating. Flushing, on the contrary, acts directly on the accumulated matter in the colon (which cathartics never do), and, instead of causing an unnatural excitation of any of the natural processes, it induces a calm, restful feeling and a sense of profound relief.

"It is a debilitating practice," the objectors urge. Here, again, we join issue. We are in a position to prove a decided negative.

We have the evidence of thousands of people to the contrary—people who have tested the treatment, and, setting aside the weight of testimony, even the most prejudiced mind must admit, that actual, *personal* experience is more to be relied on than unsupported theory.

Dr. Forrest said that his patients who had used the treatment for months, and even years, had steadily gained in strength and flesh all the time.

Another favorite objection is that "it causes

the intestines to become weakened and dependent upon this unnatural method." To this we reply that it is a well-known fact that at least fifty per cent. of people in civilized (?) communities are slaves to the purgative habit, the system refusing to fulfill its functions without this unnatural excitation; therefore, if dependence must be placed in something, we should unhesitatingly give the preference to water, as against cathartics, but the whole weight of evidence shows that the objection has no foundation in fact.

On this subject Dr. Forrest said: "Flushing the colon does not cause weakening of the intestines. When this procedure is no longer necessary, owing to better physical conditions, the intestines have also been strengthened and improved in tone and will carry on their functions unaided."

Dr. Stevens, who has used the treatment upon himself and patients for over twenty years, says that it in no wise interferes in his case with the normal movement of the bowels. To test it in this respect he has frequently discontinued its use for a week, with the result

of a regular movement, as soon as enough fæcal matter had accumulated to demand it.

For over twenty years he has practiced flushing upon himself, and, although now between seventy and eighty years old, since beginning its use he has never known a day of sickness.

It is contended by some people, including a percentage of physicians, that the frequent use of this treatment will so stretch the colon that it will remain permanently distended. This argument is totally opposed to physiological law, to say nothing of experience and common sense. The veriest tyro in the matter of exercise knows that exercise develops a muscle; that repeated flexion and extension of the arm, for instance, will strengthen the muscles of that limb, not cause them to lose their contractibility. All muscle fibres are alike in structure, except that some are voluntary, others involuntary, but that difference is simply due to the difference in the source of nerve supply. There is no reason that can be shown why the muscles of the colon should lose their elasticity through exercise in contra-distinc-

tion to all the other muscles of the body, since they are not subjected to any extraordinary strain, the extreme tension only lasting for a few seconds, while as soon as the water commences to escape, relaxation follows, and, in addition, heat acts as a stimulant. The objection does not even merit serious consideration.

"It operates against peristalsis," (contracting wave), we are told. We deny it, for the energy evinced by the intestine in expelling the water is proof of increased peristaltic vigor, if it is proof of anything. And even if it did suspend peristalsis for a few minutes, is it not a fact that other natural functions can be suspended for a much longer period, only to be resumed with unabated vigor?

Equally absurd, and destitute of foundation, in fact, is the objection frequently advanced that the washing of the interior surface of the colon is injurious; as it washes away the fluid that Nature secretes for the purpose of this lubrication.

Does bathing the external surface of the body prevent the further excretion of perspiration; or bathing the eyes destroy the functions

of the Meibomian glands? Does the drinking of water prevent any further discharge of saliva into the mouth, or of gastric juice into the stomach? If the washing away of a secretion destroyed the power of the secreting gland, human existence would be brief indeed.

The truth is, that not one in ten thousand has any practical knowledge of the subject. They may possess a smattering, and in the endeavor to make it show to advantage, they draw upon their imagination to supply the deficiency. On the other hand, we have been making this subject a constant study for the past thirty-two years, having had experience in thousands of cases, and therefore, contend that our opinion is of more value and is at least entitled to respectful consideration.

Whether the practice of the treatment is to be persisted in will, of course, depend upon the nature and habits of the patient. If the pernicious habits that caused the trouble are not abandoned, a constant resort to the treatment will be necessary. If the patient is naturally of a costive habit, and has thoroughly weakened his intestines by a reckless and indiscrim-

inate use of cathartics, it will require a long persistence in reformed habits before the weakened bowels will have gained sufficient strength to fulfil their functions normally.

It is advisable for elderly people to use it more or less continuously throughout life, for with advancing years the bowels naturally become less active, and this simple process offers a valuable means of assistance to flagging nature at the cost of little, if any, exertion; in fact, after a little experience no more will be thought of using the "Cascade" than of taking a meal.

We would strictly impress on the minds of those who propose to give this treatment a trial that, like every other undertaking in life, thoroughness and persistence are absolutely indispensable to success. No great end was ever yet achieved except by hard work, conscientiousness and perseverance, and these three factors are in the highest degree necessary to restore a condition from which it has long been estranged.

If it were a question of large pecuniary profit to the patient, it is scarcely necessary

to say that every nerve would be strained to its utmost tension to bring the coveted prize within his grasp; yet here the reward is of infinitely greater value, a prize compared with which riches are as dross in comparison with gold. It is Health, without which the acquisition of Wealth, is well-nigh impossible, and its possession as profitless to the possessor as Dead Sea fruit.

"Heaven fights on the side of the strongest battalions," is a military aphorism, and Nature ranges herself on the side of the individual who co-operates with her most faithfully, who, in the struggle for existence, brings the greatest amount of determination and perseverance to the encounter.

Perseverance in the treatment will achieve results that seem little short of miraculous to those accustomed to the "hit or miss" methods that have so long been in use. And, best of all, the benefit attained will be permanent, for the system being thoroughly cleansed, so that after a year's conscientious use the person practising it will be repaid a thousand times.

In dealing with the subject of constipation,

which is the most prevalent of all disorders of the body, and is, in fact, the fundamental cause of a great many human ills: the importance of drinking freely of water, from one to two hours after eating a meal, cannot be over-estimated, and most essential of all is the glass of water, half an hour before breakfast. If the digestion is faulty, the morning glass should be hot and sipped slowly.

PART IV.

Practical Hygiene.

There is no logical reason why any human being should die before eighty at least. With proper care the century mark should be reached in many cases. This may sound like an extravagant assertion, but it is absolutely true. It all depends upon taking care of the human machine. Ask an engineer how long a locomotive would last if drawn at express speed every day, or if left standing idly on a siding! He will tell you that overwork or disuse are fatal to mechanism, so far as its capacity for lasting is concerned. Well, the most finished product of man's handiwork in machinery cannot begin to compare with that wonderful, complex piece of merchanism—the human body; and if care will prolong the life

of the lifeless machine, the veriest dullard cannot fail to perceive that the same rule applies with ten-fold force to the human organism, which possesses within itself the power of recuperation—a living machine, every atom of which is being daily replaced as fast as the friction of life disintegrates.

If the locomotive were capable of being reproduced in like manner—of having the daily waste of substance replaced during rest by proper attention to its needs—do you think its owners would ever allow it to wear or rust out? Would they not bend every energy to prolong its existence indefinitely? Most assuredly they would. And is the body, the earthly habitation of the real man, of less importance to himself than the creations of his own hands? Common sense says, "No!" But daily experience shows us that the bulk of humanity are far less careful of the earthly husk that shelters the divine *ego* than of the machinery that ministers to their wants. We repeat, there is no logical reason why man should not live to be a hundred, or even more, if only proper care be exercised. The hurry of modern life is fatal

to the expectation of longevity, so also is over-indulgence in the pleasures of the table, which is one of the besetting sins of the present generation. If from childhood the care of the human body was made the subject of constant instruction, the second generation from now would see such a marked change in the personnel of the race as would astound even the most sanguine. What if a few less dollars were piled on each other? Which is the more to be desired, a perfect, healthful physique, or a full purse?

To preserve the body in health is an easy matter, if the individual will only bring the same thoughtful intelligence to bear on the subject that he does on the ordinary affairs of life. The natural agencies for the preservation of health are, as previously stated, Pure Water, Sunlight, Fresh Air, Diet and Exercise. The first three are furnished "without money and without price" by the all-wise Mother, while the two last simply require a slight exertion of will power, tempered with intelligence.

Of the quintette of agencies mentioned

above, water is one of the most important. Water enters more largely into the composition of all organic substance than the majority of people dream of, and this is notably true of the human body. Few people realize that sixty-six per cent. of their earthly tenement consists of the fluid in which they perform their ablutions, yet such is the fact.

This important physiological truth should be carefully laid to heart, for it accentuates the vital necessity of imbibing a sufficient quantity of fluid daily to preserve the proportion in the system requisite for health. Water is the only known substance that possesses the power of permeating every cell and fibre of the living organism, without creating disturbance or irritation. Water is, in fact, an indispensable necessity for physical existence—its excess or deficit creating abnormal conditions; but the latter is the more common condition. Being universally present in all tissues of the body, water is the principal agent in the elimination of waste material from the body, according to Nature's plan—hence, for the preservation of health, every adult should drink from two to

three pints of water per day, certainly not less than two quarts. One of the remedial factors in the copious use of water in "flushing the colon" is that a liberal percentage of it is absorbed through the walls of the colon, directly into the circulation, thus increasing the amount in the tissues, and causing more fluid to pass through the kidneys—cleansing them.

Hot water used as a stomach bath (see description under Part VIII) is a valuable auxiliary in the preservation of health.

By its means the stomach is cleansed of mucous accumulations and particles of undigested food, thus enabling it to perform its functions satisfactorily. If, as is often the case undigested food remains in the stomach, it ferments, causing what is known as sour stomach. By regular flushing, the digestive fluids are free to act better on the new intake of food and thus materially aid digestion.

With the body externally and internally in a clean condition, sickness is less apt to occur. But there are external applications of water, which are equally important for the preserva-

tion of health, and first and foremost is the bath.

It is a matter of authentic history that the most highly enlightened and prosperous people of the world have been celebrated for their devotion to the bath as a means of securing health and vigor—as a means of curing disease, and preventing it, by promoting the activity of the skin. The excavations at Pompeii show the devotion of the people to luxurious bathing. The Romans are famous to this day for the magnificence of their lavatories and the universal use of them by the rich and poor alike.

Most people are familiar with the aphorism, "cleanliness is next to godliness," a statement that by implication relegates cleanliness to the second place, but we would transpose this stated sequence of conditions, and assign the premier position to cleanliness; for we contend that purity of soul presupposes purity of body. It is true that we sometimes find a "jewel in an Ethiop's ear," but it is the exception that proves the rule.

But it is not from the moral standpoint that

we wish to consider the subject of physical cleanliness, but from the hygienic. How few people there are who are *really* physically clean! The outward semblance of cleanliness too frequently poses as the real article.

Among the white races of the earth, the English are the greatest devotees of the daily tub, to which custom their ruddy complexions are largely due; but Japan is pre-eminently in the lead in the matter of daily bathing, for it is doubtful if there could be found in the land of the "little brown people" a single individual who does not bathe the whole body daily, unless physically incapacitated.

The skin is such an important excretory organ that the importance of keeping its innumerable infinitesimal outlets free from obstruction cannot be overestimated. As the structure of the skin may not be understood by the average reader, we will briefly describe this wonderful depurating organ, that the paramount importance of its functions may be properly appreciated.

The skin consists of two layers, the derma, or true skin, and the epidermis, or cuticle. It

is the principal seat of the sense of touch, and on the surface of the upper layer are the sensitive papillæ, which receive and respond to impressions; and within, or imbedded beneath it, are organs with special functions, viz., the sweat glands, hair follicles and sebaceous glands. Its value as a means of depuration is incalculable, as by it vast quantities of the aqueous and gaseous refuse matter is conveyed from the body. By the aid of a four diameter magnifying glass applied to the skin of the palm of the hand, the curiously inclined will observe that it is divided into fine ridges, which are punctured regularly with minute holes. These are the mouths of the sweat glands, and generally known as the pores of the skin. Their function is to bring moisture to the surface of the skin; which is secreted from the blood, and chemical analysis reveals the fact that this moisture is always more or less loaded with worn-out and effete matter. It is estimated that there are 3,800 of these glands in each square inch of skin, and that their total length, in an ordinary person, if placed end to end, would be ten miles. Then there are the

sebaceous, or oil glands, which oil the skin and keep it flexible. Now, as the process of destruction and upbuilding is perpetually going on in the body, and the skin being one of the principal avenues by which the refuse is removed, the vital necessity of keeping this organ perfectly clean becomes apparent at once; for this refuse matter, if retained in the system, acts as a poison, and furnishes food for disease germs to feed upon.

It has been demonstrated by experiment upon dogs from which the hair had been shorn that a coat of varnish applied to the body (thus effectually closing the pores), will cause death in a very short while. No better object lesson could be given of the imperative necessity of keeping the skin perfectly clean, if you wish to enjoy good health.

It is an easy matter to keep all these miles of tubing in a perfectly natural and active condition, by a strict observance of the fundamental principle—cleanliness. Bathe the body daily, complete, immersion, if practicable; if this is not possible, then sponge the body thoroughly, all over; but if both methods are ren-

dered out of the question by circumstances, then adopt the best substitute, namely, vigorous friction with a coarse towel.

As to the temperature of the bath, that must, to a great extent, depend upon the conditions of life, and the predisposition and susceptibility of the individual; but the cold bath should always be employed in preference to the warm bath, when conditions permit. The cold bath is a powerful stimulant to the sympathetic nervous system, and as that is the great regulator of nutrition, the value of cold bathing to those afflicted with digestive disturbances will be readily understood, since all the digestive and assimilative processes are quickened by it. The glands of the stomach secrete more hydrochloric acid on account of this stimulus, and a better quality of gastric juice being thus formed, not only is the digestion improved, but the system is better enabled to resist microbic invasion. The cold bath also stimulates the vaso-motor system, which regulates the circulation, by contracting and dilating the vessels, and increases the activity of the capillaries, or small blood vessels. It thus increases

the resisting power of the skin, by enabling it to reheat the surface after a chill, and this is the reason why people who habitually use the cold bath are practically proof against "colds."

People employed in sedentary occupations are especially benefited by the cold bath, but should employ a hot bath for three or four minutes beforehand. It is also especially beneficial to women, as, being an excellent nerve tonic, it successfully combats all forms of nervous weakness, and is an admirable preventative of hysteria.

Children under seven years of age do not bear the application of cold water very well, and it is advisable not to use the water at a lower temperature than 70° Fah., and to employ friction constantly while administering it; but after that age the temperature may be gradually lowered. In old age the neutral bath, from 75 to 80° Fahr., will be found the best for general use, accompanied by friction.

The bath, to be thoroughly beneficial, should be taken at one of the three following portions of the day: immediately upon rising, about ten o'clock, or just before going to bed. The

early morning bath is, however, immeasurably the best, and if cold, will be found a wonderful aid in promoting health and vigor, and being such a necessity, especially in the preservation of health, and the constant practice of it, strongly urged, we append the following useful suggestions for guidance:

A full meal should not be taken in less than half an hour after bathing. Nor should a bath be taken in less than an hour and a half after eating a full meal.

You can bathe with impunity in cold water when the body is perspiring freely, as long as the breathing is not disturbed, nor the body exhausted by over-exertion.

Never bathe in cool or cold water when the body is cold. First restore warmth by exercise.

Always wet the head before taking a plunge bath, and the chest also, if the lungs are weak.

In case of sickness, where it becomes necessary to assist Nature in ridding the system of impurities through the medium of the sweat glands, the "wet sheet pack" will be found invaluable. It is usually regarded by those im-

perfectly acquainted with its action as simply the chief factor in a sweating process, but it is more than that. Not only does it open up the pores and soften the scales of the skin, but it "draws" the morbid matter from the interior of the body, through the surface to the pores. It is of immense value in all cases of fever, especially bilious fever.

It should be born in mind that "flushing the colon" should always precede the use of the "pack."

If any one doubts the purifying efficacy of this process he can have a "demonstration strong" by the following experiment: Take any man in apparently fair health, who is not accustomed to daily bathing, but who lives at a first-class hotel, takes a bottle of wine at dinner, a glass of brandy and water occasionally, and smokes from three to six cigars per day. Put him in a pack and let him soak one or two hours. On taking him out the intolerable stench will convince all persons present that his blood and secretions were exceedingly befouled, and that a process of depuration is going on rapidly.

Full directions for the use of the pack will be found at the end of this work.

It will be necessary to take into consideration the vitality of the patient and regulate the temperature of the sheet accordingly. The best time to use it is about ten in the morning, or nine in the evening.

The Turkish bath (see Part VII) is another important factor in treating disease, also the hot foot bath, for all disturbances of the circulation, cramps, spasms and affections of the head and throat. Hot fomentations, which draw the blood to the seat of pain, thereby raising the local temperature and affording relief, and wet bandages for warming and cooling purposes will likewise be found valuable aids.

Humanity at large has never estimated water at its true value, yet all the gifts in Pandora's fable box could never equal that one inestimable boon of the Creator to the human race. Apart from its practical value, there is nothing in all the wide domain of Nature more beautiful, for in all its myriad forms and conditions it appeals equally to the artistic sense. In the restless ocean, now sleeping tranquilly

in opaline beauty beneath the summer sun, now rising in foam-crested mountainous waves beneath the winter's biting blast, its sublimity awes us. In the mighty river, rolling majestically on its tortuous course, impatient to unite itself with mother ocean, its resistless energy fascinates us. In the gigantic iceberg, with its translucent sides of shimmering green, its weird grandeur enthralls us. In the pearly dewdrop, glittering on the trembling leaf, or the hoar frost, sparkling like a wreath of diamonds in the moon's silvery rays; in the brawling mountain torrent, or the gentle brook—meandering peacefully through verdant meadows, in the mighty cataract or the feathery cascade, in the downy snowflake, or the iridescent icicle—in each and all of its many witching forms it is beautiful beyond compare. But its claims to our admiration rest not alone upon its ever varying beauty. When consumed with thirst, what beverage can equal a draught of pure, cold water? In sickness its value is simply incalculable—especially in fevers; in fact, the famous lines of Sir Walter Scott, in

praise of woman, might be justly transposed in favor of water to read thus:

> "When pain and sickness wring the brow,
> A health-restoring medium thou."

And, if we admire it for its beauty and esteem it as a beverage, how inconceivably should these feelings be intensified by the knowledge that its remedial virtues are in nowise inferior to its other qualities!

The next in importance of the great health agencies is Fresh Air. Perhaps we ought to class it as the most important, for although people have been known to live for days without water, but without air their hours would be quickly numbered. Air is a vital necessity to the human organism, and the fresher the better—it cannot be too fresh. The oxygen gas in the air is the vitalizing element. The blood corpuscles, when they enter the lungs through the capillaries, are charged with carbonic acid gas (which is a deadly poison), but when brought into contact with the oxygen, for which they have a wonderful affinity, they immediately absorb it, after ejecting the carbonic acid gas. The oxygen is at once car-

ried to the heart, and by that marvelous pumping machine sent bounding through the arteries to contribute to the animal heat of the body.

When it is taken into account that the lungs of an average sized man contain upwards of six hundred millions of minute air cells, the surface area of which represents many thousands of square feet, the danger of exposing such a vast area of delicate tissue to the action of vitiated air can be readily estimated. No matter how nutritious the food may be that is taken into the stomach, no matter how perfect the processes of digestion and assimilation are, the blood cannot be vitalized without fresh air.

It is estimated that the blood is pumped through the lungs at the rate of eight hundred quarts per hour, and that during that period it rids itself of about thirty quarts of carbonic acid gas, and absorbs about the same amount of oxygen. Think for a moment of the madness of obstructing this interchange of elements which is perpetually going on and on which life depends!

It is more especially during the hours of

sleep that fresh, pure air is needed, for that is when Nature is busiest, repairing and building up, and calls for larger supplies of oxygen to keep up the internal fires, but her efforts at repairing waste are rendered futile if you diminish the supply of the vitalizing element and compel her to use over again the refuse material she has already cast off.

In spite of the amount of literature devoted to sanitary matters, it is astonishing how little is understood of the principles of ventilation, and its supreme importance to the general welfare. We do not, of course, refer to ventilation in its broadest scientific sense, such as the securing of an adequate air supply in large auditoriums, for it is a melancholy fact that even our prominent architects not only display a pitiably deficient grasp of that phase of the subject, but of the simple, yet fundamental principles of the science, which every intelligent adult should be familiar with. How many heads of families, for instance, can intelligently ventilate a sleeping room? It is better to open the window two inches at the botton, and the same distance at the top, than to have it

open for a foot either at the top or bottom only. Considering the length of time that is spent in the sleeping apartment, the paramount importance of a constant supply of fresh air is readily perceived. No matter how perfect digestion and assimilation may be, if the blood is not thoroughly oxygenated, the best of foods fail of their intended effect. Even the least fastidious would object to drinking water that had been used for washing purposes by others; yet it is quite as objectionable to breathe air that is charged with the waste products of bodies that may even be diseased.

Better let in cold air and put on more bedclothes, as long as you do not sleep in a draught.

Oxygen keeps up the animal heat of the body, and you can really keep warmer in a room with plenty of fresh air than in a close room where the air is vitiated.

But in the sick room fresh air is of paramount importance, not only for the patient, but for the attendants, who are otherwise com-

pelled to inhale the poisonous exhalations from the diseased body.

Let no consideration blind you, either in sickness or in health, to the imperative necessity of plenty of fresh air.

The next great natural agency, and one to which scant attention is paid, compared with its hygienic importance, is Light, but more especially Sunlight.

Sunlight is the great health-giving agent. The sun is the great source of life. Its rays stimulate the growth of every living organism, and there is no doubt but they exert a chemical action upon living tissue with which we are as yet but imperfectly acquainted. This fact has been recognized of late years, hence our winter resorts are liberally supplied with sun parlors, in which those in quest of health may enjoy the rejuvenating effect of solar heat without exposing themselves to the inclemency of wintry weather. This is a revival of an old Roman custom, for the more opulent of that nation had sun baths on the roofs of their dwellings. Sunshine is as necessary to robust, vigorous health as either air or water. Then seize the

full enjoyment of it whenever opportunity offers! It is a stimulant and tonic that has no superior.

For nervous debility and insomnia the treatment of all others is rest in sunshine. Draw the bed to the window and let the patient lie in the sun for hours. There is no tonic like it—provided the good effects are not neutralized by ill-feeling. To restore a withered arm, a palsied or rheumatic limb, or to bring a case of nervous prostration up speedily, a most efficient part of the treatment would be to expose the limb or the person as many hours to direct sunlight as the day would afford. With weak lungs let the sun fall on the chest for hours. There will be no doubt left in the mind that there is a curative power in the chemical rays of the sun.

Women especially need to make systematic trial of the sun's healing and rejuvenating rays. The woman who wants a cheek like a rose should pull her soft pillows into the window and let the sun blaze first on one cheek and then on the other, and she will gain color warranted not to wash off.

Thus it will be seen that the curative properties of sunlight are in nowise overestimated, but in cases of sickness its beneficial action is purely supplementary. The system must first be thoroughtly cleansed by "flushing the colon," then, the ground work of improvement being laid, Fresh Air and Sunlight will prove themselves worthy and efficient colleagues in the task of restoring health.

Singly, each is of intrinsic value, but inadequate to cope with disease single-handed (although they may mitigate it), but combined they form a Trinity so powerful that disease can never successfully oppose them.

PART V.

Exercise.

Motion is life. The health of both body and mind depend upon it. Inaction means stagnation, a condition fatal to health. Hence the necessity of exercise. As before stated, disuse is as fatal to a piece of machinery as excessive use; in fact, it is far more likely to rust out than to wear out. Activity is essential to life and health, and can never be prejudicial, provided that moderation is observed and the muscular system not strained or overworked.

There are thousands of miles of minute tubing in the human body—the arterioles, veins, capillaries and lympathic vessels. They ramify through every portion of the body tissues, the first carrying the vitalized blood for nourishment of the parts, the second returning the impure blood, charged with the waste of the structures, the third being the intermediate

stage between the first and second, while the fourth and last, the lymphatic vessels, collect the surplus nutrition and return it to the circulation. In addition the lymphatics assist in the conveyance of effete matter. Whenever disease germs are present in the system, they first manifest themselves in the lymph, but this fluid, being densely populated with phagocytes (white blood corpuscles), the microorganisms are speedily destroyed, if the body is in a healthy, vigorous condition.

In view of the vital character of the fluids, activity of motion is indispensable for the best performance of their separate functions, and exercise supplies the desired stimulus. Whenever a muscle is contracted the blood is wholly or partially expelled from it proportionately to the force of the contraction, and in its escape it carries with it the waste material; but as soon as the muscle is relaxed fresh blood from the arterial supply re-enters the structure, bearing fresh nutrition.

By a wise provision of Nature, the amount of nutrition supplied is always in excess of the waste products removed; that is, all things

being equal, so that the more exercise a part is subjected to the more nutrition it receives. This explains the unusual development of certain parts of the body which are called into excessive use in certain occupations.

The reason for this is perfectly simple, and may be expressed in two words—unequal nutrition—for the muscles that are unduly exercised appropriate the nutriment that should be equally distributed, so that the neglected muscles become weakened and stiff. Hence, any system of exercises designated to develop the body should be so arranged as to call into play every muscle in the individual, thus insuring harmonious development in every direction.

Muscular activity has a most beneficial effect upon all the vital processes, digestion, assimilation and nutrition. The digestive powers work more briskly to prepare the needed nourishment, and the blood circulates more rapidly to carry the material for repair to the parts that need it, so that by moderate physical exercise, judiciously distributed, the whole body is built up and strengthened, and the results is a suppleness of frame and a clearness

of head that makes life indeed worth living.

To the invalid it is, of course, idle to talk of active exercise, but there are certain forms of passive exercise accessible to such people. Massage, for instance, which, judiciously administered, will do for the sick, in a modified degree, what active exercise does for the comparatively well. It will stimulate the circulation in the deeper tissues, and set the various fluids of the body moving in a beneficial manner. There is also a mild form of active exercise which may be practised by those who have the misfortune to be confined to bed, and that is by tensing the muscles; such as clenching the hands and contracting the toes, also by gentle contraction of the arms and legs alternately.

But one of the most important factors in quickening and stimulating the movement of the fluids is exercising the lungs, and that can be accomplished with a fair measure of success even by the bed-ridden. Every time the chest cavity is emptied by the expiration of the breath a partial vacuum is created which exerts a tremendous suction power. It is one of

the principal forces concerned in the return of the venous blood to the heart, but it also exerts a like effect upon the lymphatic current, hence deep breathing is a valuable exercise for those unable to take any other.

In commencing the development of the body by any system of physical culture, the first and most important thing to do is to develop the lungs. Good lungs and good digestion go together. Before food can be assimilated it must undergo oxygenation, which is neither more nor less than chemical combustion. For this oxygen is necessary, which, uniting with the carbon of the food, results in oxidation, and as the amount of oxygen inhaled depends upon the capacity of the lungs, it will readily be seen how much depends upon those organs. We cannot inhale too much oxygen, while we can take too much food; therefore, the greater the lung capacity the better the digestion.

How to Exercise the Lungs.

1. When in the open air, walk erect, head up, chin drawn in, shoulders thrown back, thoroughly inflate the lungs and retain the air

for a second or two, then expel it gently. Practice this several times a day, and if your employment keeps you in, make time and go out.

2. The first thing in the morning and the last thing at night, when you have nothing on but your underclothing, stand with your back against the wall and fill the lungs to their ut-

Fig. 1

most capacity, then—retaining the breath—gently tap the chest all over with the open hand. Do this regularly every morning and night, gently at first, but gradually increasing in the length of time for holding the breath and the force of the blows as the lungs grow stronger.

3. Stand upright, heels touching, toes turned out. Place the hands on the hips as in Fig. 1, the fingers resting on the diaphragm, the thumbs in the soft part of the back. Now, inflate the lungs and force the air down into the lower back part of the lungs, forcing out the thumbs. Do this half a dozen times at first, gradually increasing the number. Women seldom use this part of the lungs—tight dresses and corsets prevent them.

4. While in the same position, fill the upper part of the lungs full, then force the air down into the lower part of the lungs and back again by alternately contracting the upper and lower muscles of the chest. Do this repeatedly, for, besides being a good lung developer, it is an excellent exercise for the liver.

5. Stand erect, as in Fig. 2, the arms hanging close by the sides, then slowly raise the arms until they are in the same position as Fig. 2, at the same time gradually taking in a full breath until the lungs are completely filled, then, after holding the breath for a few seconds, gradually lower the arms, at the same time gradually expelling the breath. After

doing this a few times—while the lungs are full—raise and lower the arms several times quickly.

6. Hold the arms straight out (see dotted lines in Fig. 2), then slowly throw them back

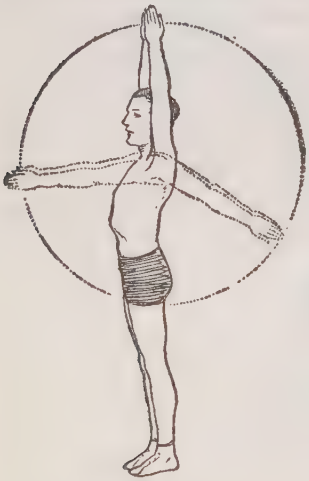


Fig. 2

Fig. 3

behind you as far as possible, at the same time taking a full breath, then bring them slowly back to the front, as at first, expelling the breath while doing so. Do this several times, then fully inflate the lungs, and while holding the breath move the arms backward and

forward, in the same way, but quickly. It is important to inflate and empty the lungs fully and completely during this exercise.

Combination Lung and Muscle Exercises.

7. First rotate the right arm in a circle, as in dotted lines in Fig. 2, downward in front of you a few times, then reverse the movement. Next, thrust the shoulder back as far as it will go and rotate the arm in the same manner. Follow with the left arm in the same manner, then both alternately, but at the same time relax the arms completely, allowing them to become perfectly limp, at the same time filling and emptying the lungs completely.

8. Lie flat on the floor, face downward, with the elbows bent and the palms of the hands flat on the floor by the sides, body fully extended. Then, keeping the body perfectly rigid, raise it up by the muscles of the arms alone, until it only rests on the arms and toes, then lower the body gradually until the chest touches the floor, at the same time exercising the lungs to their fullest extent. This may be practiced on a bed or couch to commence

with, and should be taken slowly at first, until it can be done half a dozen times without discomfort.

9. Stand as in Fig. 3, fill the lungs completely and force the air down into the lower part of the lungs, as in Exercise 3. Then, keeping the lower limbs perfectly stiff, with

Fig. 4

muscles tensed, bend the body forward from the middle of the trunk (see dotted lines in Fig. 3, in front), and while doing this empty the lungs quickly. Then straighten up again, at the same time filling the lungs. This should be repeated from 6 to 12 times. Then repeat the operation, but bending backward instead of forward, paying careful attention to

the emptying and filling of the lungs. Then, with the lungs full and breath retained, move the body backward and forward quickly several times.

10. Retaining the same position as in last exercise, move the upper part of the body to the right a few times, then a few times to the left, after each movement returning to the upright position. Then move in the same manner from right to left, alternately. By referring to Fig. 4, you will readily understand the nature of these movements, which not only benefit the lungs, but impart grace and suppleness to the body.

11. Still retaining the attitude as shown in Fig. 4, press the arms and elbows forward as far as possible, at the same time expelling the breath; then press them backward as far as it is possible to force them, at the same time inflating the lungs to their fullest extent.

Arm and Finger Exercises.

12 Completely relax the muscles of the fingers and hands, letting the hands hang limply from the wrists, then shake them up and down from

side to side, as if cracking a whip. Then rotate them from the wrists, as shown in Fig. 5. These movements should all be made with great rapidity, the hands being rendered as near lifeless as possible.

Next, with the upper part of the arm held out at a right angle from the body, and the forearm hanging downward, completely relax

Fig. 5

the muscles of the elbow. Then shake and rotate the whole of the forearm in the same manner as described for the hands.

Shoulder and Arm Exercises.

13. Allow the arms to hang by the side, now press the right shoulder as far back as it will

go, then as high as it will go, then forward as far as it will go, and drop it again, then rotate it several times. Do the same with the left, then both together. Strike out with the right

Fig. 6

Fig. 7

Fig. 8

hand, tightly clenched, then the left, then both together. Repeat horizontally, right and left, then straight up overhead, then down by the sides.

Exercises for the Neck.

14. If Figures 6, 7 and 8 are carefully studied, no explanation will be needed. The principal thing to be observed is to keep the body perfectly rigid and use the muscles of the neck only. It is a most valuable exercise

and should be carefully and faithfully practiced.

Hip and Leg Exercises.

15. Assume the position indicated in Fig. 4, but keep all the muscles of the body (with

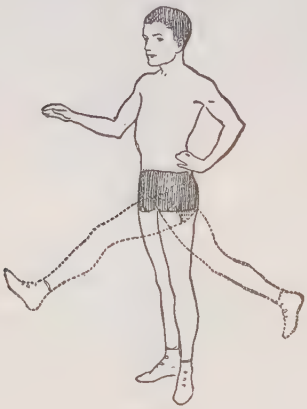


Fig. 9

the exception of the muscles of the hips) perfectly rigid. Now, without bending the knees, bend the body forward as far as you can several times, then backward several times, then to each side successively. Make the bending movements several times in each direction, and

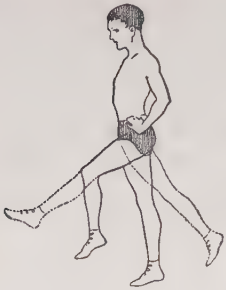


Fig. 10

Fig. 11

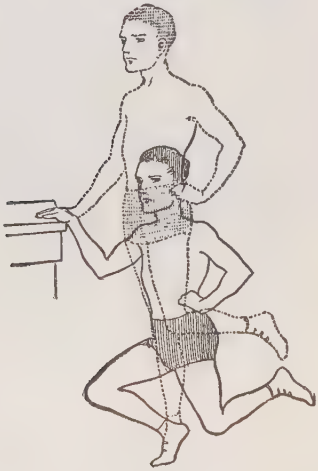


Fig. 12

be careful not to relax the muscles other than those of the hips; and to conclude the exercise rotate the hips round and round.

16. Relax the muscles of the right leg, keeping all the other muscles firmly tensed. Then swing the leg from the hip joint, like a pendulum, backward and forward, as shown in Fig. 9. Try to do this without support, balanced on the one leg, as it materially assists in developing the muscles. Then repeat with the left leg. Next, relax the muscles of the leg from the knee downward, keeping the muscles of the thigh rigid, and swing the leg backward and forward from the knee only (see dotted lines in Fig. 10), and increase the number of movements each day, as the muscles gain strength and you gain experience.

Figures 11 and 12 illustrate some excellent leg exercises, which bring into play certain muscles which usually receive but little exercise, and may be practiced with great advantage.

Ankle and Foot Exercises.

17. Stand upright, holding yourself firmly and stiffly, then raise yourself up and down on your toes.

Whole Body Exercises.

1. Raise the arms above the head, alongside the ears, then bring them down with a steady sweep, without bending the knees, until the fingers touch the floor. Be sure to relax the muscles of the neck and allow the head to hang.

Fig. 13

2. Place the hands upon the breast and drop the head backward, a little to one side, then bend the body backward as far as possible.

3. Curve the right arm above the head, toward the left shoulder, and allow the weight of the body to rest on the left leg, the right foot being carried slightly outward. Allow the body to hang down as far as possible on the left side, without straining too much. Then reverse the movement. (See Fig. 13.)

Stretching.

Is quite a luxury, but few people know how to do it.

Stand in the position indicated in Fig. 14. Then raise yourself on the tips of your toes and try your best to touch the ceiling. You will appreciate this exercise as a relaxation.

Fig. 14

The Art of Standing Properly.

Is only imperfectly understood by the majority of people, and yet it is the key to a graceful carriage, an accomplishment that

most people desire to possess, especially ladies. Figures 15 and 16 will serve to illustrate what is necessary to acquire this art and to emphasize the difference between the correct and the incorrect methods.

Fig. 15

Fig. 16

Fig. 17

In the foregoing list of exercises we have carefully omitted all those requiring apparatus of any kind, selecting only such as can be practiced in the privacy of your own room, with-

out assistance from an instructor or paraphernalia of any kind. Dumb bells, Indian clubs, etc., are valuable after a certain degree of muscular improvement has been attained, but when that point is reached we should advise the individual to join a gymnasium and practice further development under a competent instructor.

All the exercises given have been proven of great value in building up the system, and are designed as aids to the preservation of health and the upbuilding of weakly people—not to develop trained athletes. These exercises bring into play a number of muscles that are not called into general use, and thus promote harmonious development of the whole body.

PART VI.

The Diet Question.

Since an increase in the acidity of the body is recognized as a factor in the causation of many diseases, this table of the foods that increase or decrease body acidity will be found of value.

FOODS THAT PRODUCE ACIDS OR ALKALIES IN THE BODY.

Acid-Producing Foods.

The figures represent the total c.c. of acidity over base.

	Per 100 grams
Bread	2.7
Bread, whole wheat	3.0
Corn	5.95
Crackers	7.81
Cranberries	
Eggs	11.10
Egg white	5.24
Egg yolk	26.69
Fish, haddock	16.07
Fish, pike	11.81
Meat, beef, lean	13.91
Meat, chicken	17.01
Meat, frog	10.36
Meat, pork, lean	11.87
Meat, rabbit	14.80
Meat, veal	13.52
Oysters	30.00
Oatmeal	12.93
Peanuts	3.9
Prunes	
Rice	8.1

ALKALI-PRODUCING FOODS.

Almonds	12.38	Currants, dried	5.97
Apples	3.76	Lemons	5.45
Asparagus	.81	Lettuce	7.37
Bananas	5.56	Milk, cows'	2.37
Beans, dried	23.87	Muskmelon	7.47
Beans, lima, dried	41.65	Oranges	5.61
Beets	10.86	Peaches	5.04
Cabbage	4.34	Pears, dried	7.07
Carrots	10.82	Potatoes	7.19
Cauliflower	5.33	Radishes	2.87
Celery	7.78	Raisins	23.63
Chestnuts	7.42	Turnips	2.68

As we have already stated, the human system is in a state of constant change. Disintegration of tissue is taking place during every moment of existence, and the preservation of health depends upon the prompt elimination of waste material. But the destruction of tissue, due to the daily friction of life, must be made good, and this replacement of substance is effected by the food we eat. It becomes a matter of individual importance, therefore, to every individual to consider the question of eating from the rational standpoint.

It is a grave mistake to suppose that it is necessary to eat a large quantity of food to become healthy and strong. The system only needs sufficient nourishment to repair the

waste that has taken place. Besides, the digestive fluids are not secreted in an indefinite quantity, but in proportion to the immediate need. Hence, food taken in excess of requirements, being only partially digested, acts as a foreign substance; *i.e.,* a poison, and in addition unduly taxes the system to dispose of the unnecessary waste.

Instead of "eating to live," a large proportion of people simply "live to eat." But sooner or later Nature exacts the penalty for violation of one of her cardinal laws, which is "temperance." An outraged stomach will not always remain quiescent, and when the reaction comes, the offender realizes that "they who sow the wind shall reap the whirlwind."

But people may, and do, continually do violence to the stomach, without being gluttons—we refer to the habit, so universally practiced in this country, of bolting the food without properly masticating it. So long as this iniquitous practice is persisted in, and the equally hurtful one of swallowing large quantities of liquids with the meals, and so long as sufficient time is not given the food to di-

gest, just so long will you suffer from a disordered stomach. It is a fact that the average American considers eating an unprofitable interference with his business, without stopping to weigh the advantages of sound health against the almighty dollar.

Strange, is it not, that a race, proverbial for having an eye to the main chance, should fail to recognize the financial wisdom of husbanding their health, a factor so important in successful business enterprises! They might, with advantage, copy the example of John Bull in the matter of eating.

The average Englishman regards his meals as a solemn responsibility, and tarries long at the table. The consequence is that with them dyspepsia is the exception and not, as with Americans, the rule.

What to eat, when to eat and how to eat are questions more nearly involving the health and happiness of humanity than is generally recognized.

What to Eat.

From the days of Pythagoras down to the present time it has been a moot question

whether a vegetable or meat diet was best for man. Each side can present equally strong arguments; each can point to exceptional instances of physical development under the different methods; each can point to ill results that follow rigid adherence to one method or the other, so that the natural inference would be that a happy mean between the two extremes presents the only rational solution of the question.

Even the most rabid partisan of the meat diet will readily admit that the flesh of animals is not indispensable to existence; while, on the other hand, the fact that the Indians in this country would subsist for months (without apparent discomfort) solely upon a diet of "pemmican" (dried buffalo flesh) affords ample proof that a meat diet is not without its advantages.

Diet is largely a matter of latitude. The whale blubber diet of the Esquimaux would be impossible at the equator, while the fruit and vegetable diet of the tropics would prove totally inadequate to support life at the North Pole. Nature always prompts the individual

to select the articles of food best adapted to his bodily needs, according to the climatic conditions; hence, when a man endeavors to live on the same dietary in the tropics that he has been accustomed to in the temperate zone, digestive disturbances are sure to follow.

The writer does not claim to be an expert dietitian, but there are few spots on the habitable globe that he has not visited; scarcely an edible article that he has not partaken of; scarcely a known species of human being that he has not eaten with, except the Patagonians and the Esquimaux; so that he is not entirely without experience, and it may be just possible that practical experience thus gained may be as valuable as statistics compiled in an office from data collected from different sources.

We often have the Eastern peoples (notably the Japanese and Hindoos) quoted as examples of physical health and endurance, and the adoption of a vegetarian diet urged on those grounds; but these extremists seem to lose sight of the fact that these peoples are the descendants of vegetarians for centuries past; that they have inherited the tastes of their pro-

genitors, and have evolved their present physical condition through a long period of development along those lines. To say nothing of the impracticability of suddenly converting a nation to the principles of vegetarianism, radical changes abruptly undertaken are always productive of ill effects.

It will help us to a proper understanding of the food question to consider right here what causes old age, or, rather, the physical signs of bodily infirmity that almost invariable accompanies it. We are all familiar with the wrinkled body surface, the shrunken limbs and the stiffness of joints that particularly affect the aged, and are so accustomed to regard these outward manifestations of infirmity as inevitable, that few stop to inquire whether it is natural that this should be so. Undoubtedly, these are natural effects, being the result of the operation of natural law, but if mankind lived more in harmony with Nature, these symptoms should not manifest themselves before the age of ninety or a hundred, if even then.

What is termed old age is simply ossification

(solidification of the tissues), and this is due to the constant deposition in the system of earthy substances. The result of these deposits being retained in the system is: that there is an excess of mineral matter in the bone tissue, which renders it brittle, and accounts for the susceptibility to fracture in advanced life; it causes a change in the structure of all the blood vessels, great and small, thickening their walls and thus reducing their calibre and also rendering them brittle. 'With diminished capacity the blood vessels fail to convey the requisite nutrition to the tissues, and a general lowering of the vitality follows. The capillaries no longer supply the skin with its needed pabulum, hence it loses its elasticity and color —grows yellow and forms in furrows. The circulation being sluggish, the deposition of these earthy substances in the neighborhood of the various joints and the muscular structures is facilitated, and we have the stiffness of joints and muscular pains that usually accompany age. The supply of blood to the brain and nerve substance is curtailed in the same manner, and for lack of sustenance these stru:-

tures commence to decay, which accounts for diminished mental activity and sensory impressions. As the process continues there may be almost complete obliteration of the capillaries, while the larger vessels may become so thickened that their capacity is sometimes reduced three-fifths. Then comes death.

Then, since old age is due to the cause just described, it follows, as a perfectly logical deduction, that if we can prevent the introduction of these substances into the system, or even check them, then the duration of life and preservation of function should be proportionately prolonged.

What are these substances and whence are they obtained. They consist of carbonate and phosphate of lime, principally, with small quantities of the sulphates of lime and magnesia, and a small percentage of other earthy matters. These substances are taken into the system in the food we eat and the water we drink, and it has been estimated that enough lime salts are taken into the system during an average lifetime to form a statue the size of the individual. Of course, the greater part is

eliminated by the natural processes, but enough is retained to make ossification a formidable fact.

So great is the proportion of mineral substance taken into the system in drinking water that it is safe to assert that, if after maturity was reached, only distilled or other absolutely pure water was partaken of, life would be prolonged fully ten years. Up to the mature age it would be inadvisable, as the salts are necessary for bone formation. Good filtered rain water, or melted snow, are entirely free from mineral deposits, but if they have stood for any length of time it is advisable to boil them before using, to destroy any organic matter.

But it is not in water alone that these pernicious earthy matters are found. All food substances contain them to a greater or lesser extent. The order in which foods stand in the matter of freedom from earthy impurities is as follows: Fruits, fish, animal flesh (including eggs), vegetables, cereals; so that the advocates of a strictly vegetable diet find themselves confronted by the formidable fact that their mainstay is that class of foods that con-

tain the largest proportion of those substances that hasten ossification. Ample proof is at hand that a strictly vegetable diet results in what is known as atheroma (chalky deposit), an affection of the arteries. Dr. Winckler, an enthusiastic food reformer, who wrote extensively on the subject under the nom de plume of Dr. Alanus, and practised a strict vegetarian diet for some years, was compelled to abandon it, on account of the above disease manifesting itself. Numerous similar cases were observed by Raymond, in a monastery of vegetarian friars, and among the poorer Hindoos, who live almost exclusively on rice, this trouble is of frequent occurrence.

The reason of this is obvious. Vegetable food is richer in mineral salts than animal food, and consequently, more are introduced into the blood. There are exceptions, for instance, fruits, which are an ideal food, for several excellent reasons. To commence with, they contain less earthy matter than any other known organic substance; they contain upward of 70 per cent. of the purest kind of distilled water—distilled in Nature's laboratory;

and distilled water is an admirable solvent, and is ready for immediate absorption into the blood, and, lastly, the starch of the fruit has, by the sun's action, been converted into glucose, and is practically ready for assimilation. In point of nutritive value, fruits may be classed in order as follows: Dates, figs, bananas, prunes, apples, grapes.

Bread has long been known as the "staff of life," and although it forms the main dietary staple for large numbers of people, that does not in any way prove its eligibility as an article of food. We have seen that cereals contain a very large proportion of inorganic matter (the mineral salts), and wheat is as richly endowed in this respect as any of its fellows. Wheat is rich in heat-producing qualities, which is due to the quantity of starch it contains. Now, this starch must be converted into glucose before the system can appropriate it, and as exhaustive experiments have shown that not more than four per cent. of the starch is converted by the ptyalin in the saliva, the principal work of dealing with the starch devolves upon the duodenum, or second stomach, the

fluids of the main stomach having no action upon it.

Now, this extra and unnecessary work falling upon the small intestine entails a delay in the process of digestion, and a corresponding delay in assimilation, so a habit of intestinal inactivity is induced, and the seeds of constipation sown, because starchy foods, being slow in giving up their nutritive elements, the refuse is proportionately backward in being eliminated. Fruits, on the contrary, although equally rich in heat producing qualities, yet on account of the previous natural transmutation of starch into glucose, are in a condition for immediate appropriation by the system, and consequently absorption of nutrition and elimination of waste are equally prompt. This partially explains the aperient action of fruits, although there is a chemical reason also. For the reasons above stated, lightly baked bread should never be eaten; it should be toasted thoroughly brown first, by which the first step in the conversion of the starch is accomplished.

Nuts are an excellent article of diet, as they

contain a large percentage of proteid (muscle-forming) substance, and fats—both in a state of almost absolute purity, but are somewhat deficient in starch. To those who feel that they really cannot do without meat, nuts certainly offer the best substitute. There are preparations of nuts on the market now, called nut-meats, but our advice would be, to eat all nuts without preparation, only being careful to masticate them thoroughly. The peanut is the first in rank for nutritive value, next comes the chestnut, and third, the walnut.

Our objection to nut-meats applies to all forms of concentrated foods, that is, that they do not give the digestive functions the proper amount of exercise. They do not afford sufficient opportunity for mastication, hence the food is not properly insalivated. And, again, in normal conditions, Nature demands a certain amount of bulk, that the digestive organs may have something to contract upon. It is the nature of the muscular structure to grow if exercised, and there is no reason to doubt that the stomach and intestinal muscles re-

spond to this stimulus. Bulk is especially necessary in the intestinal canal, to supply a certain amount of irritative stimulation, for the purpose of exciting peristalsis. That is one reason why whole wheat bread is preferable to white, on account of the bran, which not only supplies the bulk, but favors elimination by its irritative action.

Before proceeding any further we would call attention to the following table, showing the nutritive ingredients in food substances, and their several functions. The ingredients are classified in four divisions: 1, Proteids; 2, Fats; 3, Starches, or carbo-hydrates; 4, Mineral matters. This is the main classification; but to enable it to be better understood, we subdivide it as follows:

Protein.	a.	Albuminoids: e. g. albumen (white of egg); casein (curd) of milk; myosin, the basis of muscle (lean meat) gluten of wheat, etc.
	b.	Gelatinoids: e. g. collagen of tendons; ossein of bones, which yield gelatin or glue. (Meats and fish contain very small quantities of so-called "extractives." They include kreatin and allied compounds, and are the chief ingredients of beef-tea and meat extract. They contain nitrogen, and hence are commonly classed with protein.)

Fats.	e. g.	fat of meat; fat (butter) of milk; olive oil; oil of corn, wheat, etc.
Carbohydrates.	e. g.	sugar, starch, cellulose (woody fibre).
Mineral Matters.	e. g.	calcium phosphate or phosphate of lime; sodium chloride (common salt).

In this classification, water is not taken into account, for the reason that it is not a true nutrient, although of vital importance to the body. Now, let us consider what ultimately becomes of these substances—how Nature utilizes them in the physical economy. Protein is used to build up the solid tissues of the body, the muscles and tendons. It is also a source of nutrition for brain and nerve substance, and partially serves as fuel. Fats simply form fatty tissue and serve as fuel to maintain the heat of the body, by combustion or oxidation. Carbo-hydrates mainly serve as fuel, owing to the large percentage of carbon they contain, which readily unites with the oxygen. The mineral matters, which are also largely obtained from water, are employed in the formation of bone, and are also utilized in the blood and in other ways.

Thus we see that each constituent of the food substance fulfills a specific purpose, and

the secret of a correct and nutritious diet lies in the selection of such foods as will furnish the proper proportion of each constituent to serve the purpose for which it is designed. Any deviation from this rule must of necessity result in digestive disturbance, more or less, and although one or two digressions from the path of correct alimentation may not result in anything worse than a slight inconvenience, yet persistence in dietetic errors will inevitably terminate in physical demoralization.

Authorities differ as to the actual proportion the nutritive ingredients should bear to each other in the daily ration; but after comparing the statements advanced by different food experts, we think the following figures will represent a fair average of the various tables. The reader will see that 100 parts of carbo-hydrates is taken as the basis of calculation, the figures opposite the other ingredients representing the proportion they should bear to the basic figure.

Carbo-hydrates (carbonaceous material, starch, sugar, etc.), fat, and heat formers	100	parts
Proteids (nitrogeneous material), muscle, tissue and brain formers	40	"
Fats (animal fats, butter, etc.), fuel formers	32	"
Mineral salts	6	"
Water	670	"

With the above table in mind, it will be easy to select foods that will furnish, when combined, the proper proportion of each ingredient—that is—approximately, and to assist in the selection, we subjoin a condensed list of the more important articles of food, showing the percentage of each ingredient, as proved by analysis. We would call attention to the fact that animal foods may slightly differ in the ratio of the ingredients, owing to the food upon which the animal has been raised, and its physical condition; and, owing to the peculiarities of soil, vegetable foods may differ in like manner, but for practical purposes it will be found sufficiently correct.

In 100 Parts.

	Proteids.	Starches.	Fats.	Salts.
Lean Beef	20.2	0.0	3.6	2.6
Fat	16.9	0.0	20.0	3.1
Mutton	17.1	0.0	5.7	1.3
Veal	18.8	0.0	4.4	0.5
Pork	14.5	0.0	37.3	0.8

	Proteids.	Starches.	Fats.	Salts.
Poultry	21.0	0.0	3.8	1.2
Smoked Ham	24.0	0.0	36.5	10.1
Mackerel	23.5	0.0	6.7	1.0
Cod	27.0	0.0	0.3	22.0
White of Egg	20.4	0.0	0.0	1.6
Yolk of Egg	16.0	0.0	30.7	1.3
Cow's Milk	4.2	4.5	3.7	0.7
Cheese	28.0	1.0	23.0	7.0
Butter	2.0	1.0	85.0	1.0
Cabbage	5.0	7.8	0.5	1.2
Asparagus	1.9	2.7	0.2	0.5
Mushrooms	2.5	4.7	0.2	0.7
Potato	2.2	21.8	0.2	1.0
Sweet Potato	1.0	25.2	0.2	2.7
Celery	1.5	0.8	0.4	0.8
French Beans	23.7	55.6	2.2	3.7
Lima Beans	21.9	60.0	1.9	2.9
Green Peas	6.3	12.0	0.5	0.8
Lentils	24.8	54.7	1.8	2.4
Wheat Flour	11.6	71.0	1.3	1.6
Barley Flour	10.5	66.7	2.4	2.6
Oatmeal	12.8	65.6	5.6	3.6
Lentil Flour	25.4	57.3	1.8	2.6
Arrowroot	0.8	83.5	0.0	0.3
Chestnut	14.6	60.0	2.4	3.3
Sweet Almond	23.5	7.8	53.0	3.0
Peanut	28.3	1.8	46.2	3.3
Walnut	15.8	13.0	57.4	2.0
Apple	0.4	7.2	0.0	0.5
Cherry	0.7	10.2	0.0	0.7
Grape	0.6	14.2	0.0	0.5
Banana	4.9	19.2	0.6	1.1
Dates	6.6	54.0	0.2	1.6
Figs	6.1	60.5	0.9	2.3
Honey	0.8	74.6	0.9	0.2

Since the elements are seldom, if ever, found in the proper proportion in any food substances, it becomes necessary to exercise judg-

ment in selecting them, so that something like a well-balanced diet may be obtained; so as a further aid to enable the reader to make his selection judiciously, we would call attention to Table A on page 133 and Table B on page 134. Table A shows the proportion of various foods that is ordinarily digested, while Table B points out the time required for different articles of food to digest.

ELEMENTS IN OUR FOOD.

It is important that we should learn the elements needed in our daily foods to build up the body. Make the diet as varied as possible. Avoid a sameness. Do not mix too many things together at one meal. The body demands a certain amount of the following:

First. Fats found in nuts, butter, olive oil, cream and certain cereals. Fats sustain the nervous system and maintain heat.

Second. Protein found in nuts, macaroni, brown bread, whole wheat, eggs, oatmeal, cheese, lentils, peas and beans. Protein forms flesh, builds muscle, and produces strength.

Third. Phosphates, found in most all vegetables, and the husk of wheat included in all bread mentioned (not white flour), cheese, bananas, apples, and any fruits. Phosphates build up bone, feed brain and nerves and purify the system.

Fourth. Sugar obtained by masticating starches but most easily and best in fresh fruits and pure honey. Sugar supplies heat and energy.

Fifth. Water necessary to purify the body and supply fluid for necessary excretions which keep the system in a state of even health. We need water to bathe in internally and externally. It is impossible to set down hard and fast rules to fit every case concerning the proper proportions in which the five elements must be combined or the proper amount of each needed by each because the amount varies in every case according to age and occupation. Two ounces of protein is sufficient even for the heavy worker, six of starch, two of fat, one-half of phosphates. Four to six pounds of water per day are needed. An excess of protein causes a general condition of plethora, nervous prostration after meals, congestion, piles, headaches, excitability, sensuality, irritability and bad temper.

TABLE A.

Showing the relative digestibility of various foods.

	Protein		Fats		Carbohydrates		Mineral Matters	Water
	Digestible	Undigestible	Digestible	Undigestible	Digestible	Undigestible		
	%	%	%	%	%	%	%	%
Beef, round	23.0	0.0	8.1	0.9	0.0	0.0	1.3	66.7
Beef, sirloin	20.0	0.0	17.1	1.9	0.0	0.0	1.0	60.0
Pork, very fat	3 0	0.0	74.5	6.0	....	....	6.5	10.0
Haddock	17.1	0.0	0.3	....	0.0	0.0	1.2	81.4
Mackerel	18.8	0.0	7.4	0.8	0.0	0.0	1.4	71.6
Hen's eggs	13.4	0.0	9.4	2.4	0.7	0.0	1.0	73.1
Cow's milk	3.4	0.0	3.6	0.1	4.8	0.0	0.7	87.4
Cheese, whole milk	27.1	0.0	34.6	0.9	2.3	0.0	3.9	31.2
Butter	1.0	....	85.8	1.7	0.5	....	2.0	9.0
Oleomargarine	0.4	....	83.9	3.3	0.0	....	2.1	10.3
Sugar	0.3	....	....	....	96.7	0.0	0.8	2.2
Wheat flour, very fine	7.6	1.3	1.0	....	74.4	0.8	0.3	14.6
Wheat flour, medium	9.5	2.1	0.8	....	70.4	1.8	0.4	15.0
Wheat flour, coarse whole wheat	8.2	2.7	1.8	....	66.4	5.3	1.2	14.4
Wheat bread average	7.7	1.2	1.9	....	54.9	0.6	1.0	33.7
Black bread	4.5	1.6	1.8	....	43.3	5.3	1.5	43.8
Peas	19.7	3.2	....	....	55.7	2.1	2.5	15.0
Corn (maize) meal	7.9	1.2	3.8	....	68.7	2.3	1.6	14.5
Rice	6.2	1.2	0.4	....	78.7	0.7	0.4	12.4
Potatoes	1.5	0.5	0.2	....	19.7	1.6	1.0	75.5
Turnips	0.7	0.3	0.2	....	5.6	1.3	0.7	91.2

TABLE B.

LENGTH OF TIME REQUIRED FOR DIGESTION OF DIFFERENT ARTICLES OF FOOD.

	Hours
Apples, raw	2:00
Barley, boiled	2:00
Beef, roasted	3:00
Beefsteak, broiled	3:00
Beef, boiled	4:00
Beets, boiled	3:45
Brains, animal, boiled	1:45
Bread, corn, baked	3:15
Bread, wheat, baked	3:30
Butter, melted	3:30
Cabbage, raw	2:30
Cabbage, with vinegar	2:00
Cabbage, boiled	4:30
Cake, corn, baked	3:00
Cake, sponge baked	2:30
Catfish, fried	3:30
Cheese, old, strong	3:30
Chicken, fricasseed	2:45
Corn and beans, boiled	3:45
Custard, baked	2:45
Duck, roasted	4:00
Dumpling, apple, boiled	3:00
Eggs, hard boiled	3:30
Eggs, soft boiled	3:00
Eggs, fried	3:30
Eggs, roasted	2:15
Eggs, raw	2:00
Fowls, boiled	4:00
Fowls, roasted	4:00
Goose, roasted	2:30
Lamb, boiled	2:30
Milk, boiled	2:00
Milk, raw	2:15
Mutton, roasted	3:15
Mutton, broiled	3:00
Mutton, boiled	3:00
Oysters, raw	2:55

	Hours.
Oysters, roasted	3:15
Oysters, stewed	3:30
Pig, roasted	2:30
Pigs' feet, pickled	1:00
Pork, roasted	5:15
Pork, salted and fried	4:15
Potatoes, Irish, boiled	3:30
Potatoes, Irish, roasted	2:30
Rice, boiled	1:00
Salmon, salted	4:00
Soup, barley, boiled	1:30
Soup, bean	3:30
Soup, chicken	3:00
Soup, mutton	3:30
Soup, oyster	3:30
Tapioca, boiled	2:00
Tripe, pickled	1:00
Trout, salmon, boiled	1:30
Trout, salmon, fried	1:30
Turkey, roast	2:30
Turkey, boiled	2:30
Turnips, boiled	3:30
Veal, broiled	4:00
Veal, fried	4:30
Vegetables and meat hashed	2:30
Venison steak	1:35

We have seen that certain elements are necessary in our food for the proper replenishment of the waste that is perpetually going on, and that they must be combined in proper proportions, so that no one part of the body shall be over-nourished at the expense of the others —no organ overtaxed, but that all may be harmoniously developed.

Opinions may, and do, vary as to the source

from which this sustenance for the body should be obtained—whether from the animal or vegetable kingdoms, or both, and while admitting that vegetarianism and flesh-eating both have their advantages and disadvantages, our own conscientious conviction is, that the true solution of the question is to be found in the happy medium—that a mixed diet is the best for mankind under existing conditions.

The main argument of our vegetarian friends against the practice of flesh-eating is the humanitarian one. We are familiar with all the objections urged—the brutalizing effect upon the human mind of so much ruthless blood-shed—of the sacredness of life, and of man's presumption in daring to deprive a living creature of existence; but with all due respect to the sensibilities of these worthy people, we are inclined to think that the argument is scarcely tenable. We do not wish to be understood defending the cruelties that are said to be practised in the abattoirs; but the taking of life is inseparable from existence. It is simply a question of degree. There is a sect in India, the members of which are so scrupu-

lous regarding the sanctity of life that they carefully brush every step of the path in front of them, lest they should inadvertently step upon any creeping thing. In this, they lift the burden of responsibility from themselves for any wanton injury; but the microscope has shown us that there is a countless world of infinitesimal life all around us, and that it is practically impossible to draw a breath, or drink a mouthful of water, without destroying some living thing. If we accept the teaching of the Scriptures, that not a sparrow falls to the ground without the knowledge of the Creator, then we must conclude that the life of the ant is of as much importance in His eyes as that of the ox or sheep. We repeat, we are not posing as advocates of indiscriminate and wanton slaughter, but on utilitarian grounds, we consider the use of the flesh of animals, as a food, justifiable.

If we needed any scriptural authority for the practice, we could point to the Hebrews, who (according to Holy Writ) received through Moses not only permission to use meat as an article of diet, but instructions for the

killing of the selected animals, together with injuctions to avoid the flesh of certain kinds; and they may be cited as a striking example of the value of a mixed diet.

Here we have one of the most ancient races of the earth—a race that has endured the most terrible persecutions that ever befell a people, yet have survived it all, and are to-day a robust and unusually prolific race; while intellectually and morally they are surpassed by none. They are a greater power in the world than any other race, by reason of their skill in finance and natural business instincts. There is no question but that the sanitary system of living established by Moses, has been the principle factor in perpetuating this hardy race; and a mixed diet was and is an integral part of that system.

However, we have no desire to impose our views upon our readers, and having given expression to our sentiments, we return to the main question.

Having disposed of the question, "what to eat," we will consider another matter, almost equally important, and that is:

How to Eat.

The one fundamental principle underlying this question is thorough mastication, and we cannot too strongly impress upon our readers the necessity for its proper observance. We have already stated that digestion commences in the mouth—that by the action of the saliva, the starchy matter in food is converted into glucose. It is therefore necessary that the saliva should be brought into intimate contact with every part of the bolus; and for that purpose thorough mastication is absolutely necessary. In addition, the separation of the food into small fragments, by the teeth, assists stomach digestion, by permitting the gastric juice freer access to the food.

Drinking at meals should be avoided as much as possible. The philosophy of this is apparent, when we reflect that most digestive disturbances are accompanied by imperfect secretion of the gastric juices, and to dilute them with an excess of fluid is to weaken its power of action on the food.

But the most pernicious practice of all is

that of drinking iced water at meals, since, in addition to the ill effects described above, it temporarily paralyzes the stomach—driving the blood away from that organ when it is needed most of all. A fact which should not be lost sight of is, that no physical operation, however slight, can be accomplished without the expenditure of force (nervous energy), even though it be only the winking of an eyelid; and the labor entailed upon the system, of raising the temperature of the stomach to normal figures, after deluging it with ice water, involves a ruinous waste of vital force, in addition to the other reasons urged against it. It cannot be doubted that this essentially American habit is responsible for a large proportion of the dyspepsia that sits like an incubus upon the nation.

All condiments promote indigestion. They overstimulate the stomach, exciting the secreting glands to abnormal action, and irritating the sensitive mucous surface.

When to Eat.

For people in health, we strongly advise the three meals a day system, which experience has shown to be successful. They should be moderate in quantity, and should be eaten as follows: The first, from half an hour to an hour after rising (having previously bathed and exercised), the second, not less than four hours afterwards; the third, not less than five hours later.

This gives the stomach time to rid itself of one meal before the next is introduced, otherwise the undigested food remaining in the stomach prevents that organ from acting properly on the fresh food. It is for this reason that it is unwise to eat between meals, as, when the stomach is occupied by articles of food in various stages of digestion, undigested portions will pass out with the digested food; not only entailing a serious loss of energy and nutrition, but irritating the intestinal canal and creating unnecessary waste to be eliminated.

The above rules, as stated, apply to people in ordinarily good health. In wasting disease

it may be necessary to supply nutrition even as often as every half hour; and in all serious digestive troubles it is wiser to eat six times a day than three, the meals to be light, nutritious in quality, and small in quantity, so as not to impose too great a burden at one time on the weakened digestive apparatus.

We will now consider the action of several substances, in common use, that are inimical to health, and that have an especially demoralizing effect upon digestion.

The first of these is alcohol, which only serves as fuel, but does not form tissue. Its best friends in the medical profession no longer claim anything for it but a stimulating effect. Its action on the digestive organs (especially the stomach) is disastrous in the extreme. It destroys the appetite, although it temporarily sustains vigor by unnatural excitation.

The man who is addicted to the excessive use of alcoholic stimulants is over-taxing the vital organs of his body in the most outrageous manner, and although Nature incessantly enters protest against being overworked, he either ignorantly fails to recognize its warn-

ings, or wantonly disregards them. Let us for a few moments consider the work which the heart is called upon to do, and the amount of extra labor imposed upon it by the unwise use of alcohol. The average life of a man is thirty-eight years, and, in a healthy man, the number of heart-beats per minute is seventy, or during an average life, 76,536,740,000. Now, the use of alcohol in anything like an excessive quantity increases the action of the heart ten beats per minute, making 600 extra beats per hour, 14,400 per day, 482,000 per month, 9,784,000 per year, 195,568,000 in twenty years, and 372,793,000 in a lifetime of thirty-eight years. Or, supposing a man should live fifty years, the number of pulsations of the heart during that period, at the normal rate, would be 917,239,680. Now, if ten extra beats be added to this, for say the last twenty-five years, we find that the heart is called upon to make 91,840,000 extra beats. Think of that enormous amount of additional work imposed upon a delicate, complex piece of mechanism like the human heart!

But that is not the worst of it. The heart

should rest and sleep when we do. During sleep, the character of the beats is different from what it is during our waking hours—the beats are made singly and deliberately, with a pause between, for the heart is taking its necessary rest, to fit it for its functions on the morrow; but, if we take alcohol into the system before retiring, then the heart works harder during sleep than a healthy man's when he is awake.

Tea and coffee are substances which neither form tissue nor serve as fuel, and may be banished from the table with decided advantage. It is true that the consequences of excessive tea drinking are not as severe as those from over-indulgence in ardent spirits, but the pernicious effects of the constant drinking of strong infusions of tea justify us in calling the practice a serious menace to health. Tea leaves contain from 2 to 4 per cent. of caffeine, or theine, which is an alkaloid, and always found in combination with tannin. They also contain a volatile oil, which is the source of the aroma, and in addition possess a sedative quality. Tannin is a powerful astringent, and

hence is strongly provocative of constipation. Its action upon the mucous surface of the stomach is highly detrimental to that organ, as it arrests the excretion of the gastric juice by its contractile effect upon the glands. Its constant use will almost invariably result in digestive disturbances, and will certainly aggravate such troubles, if previously existing. It is true that a cup of hot tea is a refreshing beverage, but not more so than a cup of hot milk—in fact, it is the heat that imparts the sense of comfort experienced on drinking it. Children should never be allowed to drink either tea or coffee, as the seeds of a baneful habit may be sown, for in tea, as in dram drinking, is a habit easily acquired.

The above remarks apply in a less degree to the frequent use of coffee. The constant use of these substances produce the following results—first, increase of circulation, rise in pulse, a desire to frequently pass urine, and an exhilaration resembling intoxication. Tea tasters, as is well known, are subject to headaches and giddiness, and prone to attacks of paralysis.

General Suggestions.

One of the causes that conduce to digestive disturbances is that of solitary eating. It is a pretty well-known fact that a woman would just as soon not eat at all as to eat alone, and as a result frequently deprives herself of the necessary amount of nutrition. In fact, she impairs her digestion by not giving it sufficient work to do, while the man ruins his by spasmodically overtaxing it. For the above reasons, companionship at meals is a most desirable thing, especially if it is congenial, and light, cheerful conversations, with a little hilarity intermingled, is an excellent aid to digestion.

This is, no doubt, due to mental influence. The whole of the alimentary process is under the control of the nervous system, which has its seat in the brain, consequently, a cheerful mental attitude favors digestion. It is well known that a fit of anger may temporarily stop digestion. The mind exerts such a vast influence over every function that it is impossible to set bounds to it. We are the creatures

of habit. We eat so many times a day, from sheer force of habit. We habituate ourselves to partake of articles of food against which, at first, the senses rebel, by the same force; but it is left wholly to man's reasoning powers whether his habits shall be cultivated according to the needs of the system. If they are, perfect nutrition will be established; if they are not, he is worse off than the animal who knows only to follow the instincts of the original habits of the species. A man can exercise his will power to partake of a diet which his taste had not been able to appreciate, yet no will power can ever provide good nutrition out of a diet against which taste constantly rebels. Consciousness of the digestive organs is an offense to them. The more a man is conscious of his stomach, the less will be its capacity for performing good service; therefore, a dyspeptic should never attempt to follow a course of experimental dietetics with himself, for if he watches his stomach after his carefully selected meal, to see how it will serve him, he will always find abnormal symptoms.

Active respiration assists all forms of lymph

absorption, but gives special aid to the absorption of food substances from the stomach and intestines, because these particular lymph vessels are situated so close to the chest cavity that they are more directly under the influence of the suction action of the chest.

A few minutes spent in vigorous deep breathing exercises after each meal is one of the best means of remedying the sense of heaviness and weight of which so many complain after eating.

Thus we see that deep breathing, by favoring absorption, promotes the nourishment of the body—will assist in building tissue, in fact. Oxygen is a vital necessity for the body, and it is necessary to absorb a large quantity for the actual needs of the system, while all absorbed over the quantity means added nutrition.

The human body is a wonderfully complex piece of mechanism, and if left to itself or rather to natural guidance, its manifold functions are performed with unfailing regularity; and regularity in function means health—irregularity, disease.

Mark the rhythmic regularity of respiration.

or of the heart's contractions! Long continued regularity begets habit, which is a form of automatism; hence the necessity of regularity in action along fixed lines, and in consonance with physiological law, that good habits only may be formed.

Good habits are absolutely essential to health, which is equivalent to saying that regularity in living is an imperative necessity to that end. Regularity in rising and retiring; regularity in eating and drinking; regularity in exercise, all are equally important.

Not only does this regularity of conduct conduce to the attainment and maintenance of perfect health, but it enables the individual to accomplish more within the limits of the day, partly by economizing time, and partly by the added vigor due to improved health.

First, regularity in the hours of rising and retiring, namely, regulating the minimum period to be devoted to sleep. There is much conflict of opinion as to the amount of sleep necessary for the average adult. We have in mind an old saying which runs as follows: "Six hours' sleep for a man, seven for a woman, and

eight for a fool." This is somewhat arbitrary, and, moreover, is not in harmony with physiological law. In the first place, no hard and fast rule can be laid down that will cover all cases. Apart from the difference of sex, there are temperamental conditions which vary with every case. We are decidedly of the opinion that eight hours' sleep is necessary for the adult individual. It has been affirmed by some authorities that the more the individual sleeps the longer he will live, which is a perfectly rational claim, in view of the fact that night is Nature's repair time, when she is busy at work replacing the ravages committed by wear and tear during the day. It is a well-known fact that nearly all growth takes place during sleep.

Again, it is a fact not generally known that the heart receives no nourishment during the period of contraction, owing to the pressure upon the arteries which supply it with nutriment. It is only during the infinitesimal pause between the contractions that these arteries can carry blood to the heart tissue; hence during sleep the heart-beats differ from those of our waking hours, being fewer in number, and

with a more decided pause between. Now, the heart being to the body what the mainspring is to a watch, the necessity of affording it ample time for recuperation becomes apparent.

Next comes the question of exercise. Too little attention is paid to this matter, more especially by those engaged in sedentary occupations; yet it is in the highest degree important that the balance between the mental and physical energies should be maintained. To preserve this balance while the mind is active and the body untaxed, artificial exercise must be practiced, for physical strength cannot be promoted without some kind of bodily exercise. Unused muscles soon become flabby, as athletes and their trainers well know. The best time for taking exercise is, as stated above, just after the morning bath, and it is astonishing what results can be obtained from fifteen minutes of intelligently directed exercise each morning. Here, again, regularity will work wonders. It may be a week or two before you will notice any marked improvement in the muscular condition, but you will be amply repaid by the glow of health which pervades the

system as the results of stimulated circulation.

Last, but by no means least, comes the matter of solicitation of the bowels. In this case regularity in solicitation will invariably produce regularity in movement. The bowels should be solicited every morning, soon after rising, and every night just before retiring. We only wish that we could impress every one of our readers with the importance of this practice, and of the immense benefit of regularity in the pursuance of it. Just as the stomach requires the habit of expecting food when regularly supplied to it at stated intervals, even so will the bowels respond to solicitation if regularity be persisted in.

Nature is inexorably opposed to caprice. She executes all her processes in an orderly manner, and if not interfered with, with the greatest regularity, and if man will only cooperate with her by strict regularity in the important duties previously mentioned, the result will be a surprise to him in the form of renewed health and vigor. He will have an unclouded mind, and be ready to face the trials

of everyday existence with a courage that nothing can daunt.

But Nature demands an accurate accounting. Man thinks but little of the drafts he is continually making upon his vitality, but sooner or later the account will be presented, and payment exacted in full. There is no such thing as vicarious payment. The debtor must pay in person, and it therefore behooves every man to watch the debit side of his life's ledger, and make a daily balance of his account with Nature.

PART VII.

Treatment of Constipation.

This condition of the system has been so frequently referred to already that further comment upon it may be deemed unnecessary. Its causes are varied, insufficient exercise in the open air, hastily eaten and imperfectly masticated food. Also many articles of food tend to induce the evil of habitual constipation.

Whatever you may do, avoid everything in the form of drugs, for they are injurious in the highest degree. The continual excitation of the excretory processes by the use of cathartics is a most pernicious practice and should be shunned.

The "Cascade" should be used each alternate day, for at least two weeks, then, twice a week, until improvement is assured. Drink a tumblerful of hot water, not less than half an hour

before breakfast, and eat freely of fruit at that meal. Also partake liberally of good, green vegetables at other meals. Eating whole-wheat bread is of decided assistance, and make it a rule to drink from two to three quarts of water each day.

The following general classification will enable anyone to select a suitable dietary to overcome even the worst case of Constipation.

The regular use of the Cleansing Tonic is very important in the treatment of chronic constipation—as it tends to tone up the bowel muscles and strengthen the intestines, thereby overcoming costiveness.

General Rules.

Diets should consist largely of easily digested fats and oils, green and fresh cooked vegetables, such as leave a large residue in the bowels. Moderate exercise and regularity in habits are important adjuncts to treatment. Active cathartic drugs should be avoided.

ARTICLES PERMITTED

SOUPS. Meat broths, oyster soup, vegetable soup.
FISH. Boiled fish of all kinds, raw oysters.
MEATS. Any tender fresh meats, poultry, game, moderate quantities only, with some fat.

EGGS. In moderation, soft cooked (with salt and butter).

FARINACEOUS. Brown or Graham bread, oatmeal, mush, hominy, whole wheat bread, Boston brown bread, the various breakfast foods, gluten bread, bran flour bread, bran biscuits, bran as a cereal.

VEGETABLES. Boiled onions, Brussels sprouts, spinach, cauliflower, potatoes, asparagus, green corn, green peas, string beans, salads with oil, celery, Spanish onions (boiled), cabbage, tomatoes, rhubarb, beets, carrots, cucumbers, lettuce, olives, olive oil, parsnips, radishes, turnips.

DESSERTS. Fruit in considerable quantities (especially fresh) stewed prunes, figs, baked apples, ripe peaches, pears, oranges (on arising), apples, melons, grapes, cherries, raisins, honey, dates, strawberries, apricots, cantaloupe, pineapple, cranberries, currants, fruit ices, fruit juices, fruit jellies, grape fruit, plums, plain puddings, English walnuts, almonds, molasses.

BEVERAGES. Plenty of pure water, hot on arising, cold (not iced) water between meals and at bedtime. Cocoa, new cider, buttermilk, lemonade, unfermented grape juice, cream.

ARTICLES TO BE AVOIDED.

Salted, smoked, potted or preserved fish or meats, beets, puddings made of rice, sago, pastry, milk, tea, cheese, bananas, hot or fresh bread, pickles, hard boiled eggs, fried foods, pork, veal, liver, red or sour wines.

A meat diet favors the growth of putrefactive type of bacteria, while a milk and vegetable diet, by favoring the growth of certain benign forms of bacteria bring about a change in the chemical action of the bowel contents and thereby inhibits or checks growth of the putrefactive kinds. The poisons or toxins resulting from this kind of putrefactive decomposition have in many instances a powerful effect on the blood pressure, and may be of great importance in the production of high-blood pressure and resulting thickening of the arterial walls. There can be no question of the importance of these putrefactive substances in the well-being of the individual. None of the products of carbo-hydrate decompositions are harmful so far as known. By carbo-hydrate fermentation acidity is increased. Many bacteria cannot live in the presence of acid.

PART VII

MASSAGE, SHEET-PACKS, ETC.

Massage.

This is the application of motion and pressure to the body, and is a most important factor in preserving or restoring health. It affords a sick person many of the benefits to be obtained from exercise without the physical effort, which he is unable to exert. The sweat glands, capillaries, and lymph channels, which constitute many miles of tubing, and in the body of a grown person, are, by carefully and systematically applied massage, stimulated to action. The currents in these vessels are a necessity of life. When they are obstructed, weakness is the result; when they cease, decay and death ensue.

When we rub our hands or feet, we say the friction warms them; in reality it is the inner vessels which the stimulated, and bring more

warm blood to the parts. If this process is extended over the whole available surface of the body, the most beneficial results will follow.

There are three recognized methods of application.

First—Rubbing, to stimulate the skin to action.

Second—Rolling, and pinching gently, also a kneading movement, used principally to stimulate the stomach, bowels, and muscular tissues.

Third—Percussion, or tapping with the ends of the fingers, softly—most efficacious in stimulating the action of the lungs.

Rub the surface first with a little olive oil, or vaseline. Use the tapping movement for the chest and back, the rubbing movement for the stomach and bowels, and the pinching or kneading movement for the limbs. In dyspepsia and constipation, great benefit is derived from massage treatment of the stomach and colon—starting the movements in the right groin, where the colon commences, and following its course to its rectal extremity (con-

sult diagram). For rheumatism, sprains, etc., commence with hot oily applications.

Most people find massage treatment to have a gentle, soothing effect. Nearly all find their appetite increased.

The Stomach Bath.

The first method is simplicity itself, and consists in drinking from half to a pint of hot water, as hot as can be drunk with comfort, in the morning after rising, or half an hour before breakfast. It loosens up the mucus in the stomach, and in half an hour it will have passed out.

The Turkish Bath.

Provide a wooden bottomed chair, and having stripped the patient of all clothing, except a pair of woolen drawers to protect his legs from the heat, let him sit on it, with his feet ankle deep in a hot foot bath, just as hot as he can bear. Wrap him about first with a blanket, tucking it close around the neck, but letting it hang loose over the chair and vessel containing the foot bath, but so arranged as to exclude the air from his person. Over the

blanket wrap one or two heavy comfortables, the object being to prevent the escape of the heat and exclude the outside air from the body. Raising one side of the comfortables and blanket, place under the chair an old tea-cup half full of alcohol. Set it on fire and again close the opening. Give him a drink of cold water, and if the head feels oppressed, apply a wet towel wrung from cold water. Add more hot water to the foot bath once or twice, keeping it as hot as he can bear it during the continuance of the bath. Keep him in the bath until the alcohol is all burned out. Then wash him down with soap and tepid water, sponge off with cool water, rubbing the flesh and working the muscles vigorously the meanwhile. Then dry off by patting the skin with the towel (not rubbing it), leaving a little moisture on it; dress quickly and let him lie down for an hour or put him to bed.

The Wet-Sheet Pack.

Spread over the bed or cot two or more heavy comfortables, over these a pair of blankets, then, if for a person of strong vitality,

wring a sheet out of cold water just dry enough not to drip, and spread it over the blanket; lay the patient stripped of all clothing on the sheet with his arms by his sides, tuck the sheet around him, then the blankets and comfortables, leaving his head out but tucking it close around the neck and over his feet—making a mummy of him, so to say. If the head is hot or aches, apply a towel wrung from cold water and renew it as often as it gets warm. To the feet apply a hot water bottle. Let him lie in the pack from twenty to forty minutes, or even longer if he is comfortable. He will soon get warm and sweat freely. This is the end desired. If he goes to sleep, as is often the case, don't be in a hurry to wake him up. He will take no harm so long as he keeps warm. See that there is plenty of fresh air in the room. When he has been in the pack a sufficient length of time close the windows, then take him out and wash him down thoroughly with soap and soft, tepid water, then sponge off with cooler water, rubbing him down vigorously and working the flesh the meanwhile. If not too weak he should assist

in operation. Dry off by patting skin with towel (not rubbing it), leaving a little moisture on skin and put to bed.

Before and during pack let patient have plenty cold water to drink, in small quantities at a time. If but little vitality, wring sheet out of tepid water instead of cold.

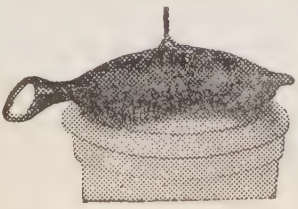
The hot sheet-pack is used in the same manner, the only difference being that the sheet is wrung out of water as hot as can be borne.

THE USE OF THE "CASCADE."

1. The best time to use "Cascade," is just before retiring and not less than three hours after last meal. Lay "Cascade" down, with handle of faucet pointing forward, and screw in large "injection point"; next, take *J. B. L. Lubricant,* spread small portion on point and insert "injection point" in rectum—*CAREFULLY*—using handle of faucet, to guide. Don't hurry, but *SIT EASILY AND FIRMLY ON RESERVOIR,* with handle of faucet between limbs, and turn on faucet, partially, for few seconds, then turn on full, and you will readily receive contents. As soon as you have received all the water you feel that you can retain; expel at once, at same time practicing movements described in part 3 of book. There will always be a fifth of water left in bag.
2. The water should be (as hot as to comfortably bear the hand in) or 100° Fr.
3. Bag should always be completely filled, without regard to quantity to be injected. This excludes air, which would otherwise be forced into the colon, preventing entrance of water, and tend to cause griping pains.
4. Those who have never practiced the flushing treatment, should proceed with discretion. The capacity of the colon, in the average adult, is one gallon, but if it be impacted it would be impossible to inject that quantity in addition to fæcal matter present. The best plan therefore, in commencing treatment, is to use a quart or three pints the first night, the next night, double quantity, and third or fourth night, full quantity should be taken.
5. Dissolve Cleansing Tonic thoroughly in teacup, with hot water (boiling water is the best), and add it when bag is half filled.

6. While receiving water, it is advisable to follow course of colon with gentle stroking motion, commencing in left groin, up, to a point just above navel, then across, and down to right groin. This facilitates entrance of water, and at the same time loosens any adherent fæcal matter in colon. When expelling, reverse movement, commencing in right groin. Study the diagram of digestive apparatus in the front of this book.
7. After expelling water, it will be found very beneficial to inject half a pint of cold water, and retain it. This will act as an excellent Rectal Tonic.
8. Best method of using "Cascade" at beginning, is every night, the first week, every other night, the second week; and thereafter, every second or third night, until you begin to improve, when intervals between treatments may be gradually lengthened.
9. For simple preservation of good health, it will be found amply sufficient to use "Cascade" about once a week or ten days.
10. It is advisable to solicit bowels, before using "Cascade," as gas will be frequently expelled, if nothing else, if this is done, and bag completely filled, pain will rarely, if ever be felt. If, however, pain should be experienced, make a strong decoction, by pouring pint of boiling water, on tablespoonful of anise seed, and add liquid to water used for flushing.
11. After using "Cascade," it is advisable to hang it up, not forgetting to always remove injection point.
12. Never pour boiling, or very hot water into bag—it is not designed to withstand such a degree of heat.
13. If you should experience any difficulty in retaining water add another tablespoonful of tonic, and difficulty will be removed. When colon has been thoroughly cleansed, it will be found beneficial to use *TEPID* instead of *HOT* water, but practical experience, must guide you. Tepid water may cause pain.
14. If faucet handle is too loose, or too tight, regulate by little screw on end of handle. To convert it into a hot water bag unscrew faucet (turning to left), and screw on small brass cap. To convert into fountain syringe, do exactly same, but when filled, screw in tubing instead of original stopper. In replacing faucet, be sure threads of screws are evenly matched, before attempting to tighten.
15. Do not let grease, in any form, come in contact with bag, as grease decomposes rubber. Use *J. B. L. Lubricant* and always anoint injection point with Lubricant before using. It is harmless to rubber.
16. Do not omit using *Cleansing Tonic.* It is invaluable for purifying water, and eliminating disease germs.

IN POSITION FOR THE



INTERNAL BATH.

PART VIII

Some Healthful Suggestions.

Prevention is better than cure, and the great elements of prevention are, knowledge of self, cleanliness, physical, mental and moral hygiene and sanitation. Nothing is so essential as a knowledge of the functioning of the body, for it is the vehicle through which the real self is to find expression; through which he is to achieve success or failure, according to the condition of its mechanism.

No engineer can obtain from the machine under his control the highest results, unless every part of the mechanism is in perfect working order. How much more important, then, that the human organism should be in perfect adjustment, since through it the mentality is to find its highest expression? Without a knowledge of its construction and its working principles, how is the individual to

raise the human machine to the highest plane of excellence and maintain it there? No one is allowed to run an engine without first passing an examination, which necessitates a certain amount of study and knowledge of the laws of mechanics; yet men undertake to run that complex machine, the human body, in utter ignorance of physiological law! Is it any wonder that there are so many breakdowns?

We may remark here that all human beings are not endowed alike with nervous force; it is largely a matter of heredity, but what we have may be cultivated and developed. Failure to do so renders the individual liable to nervous breakdown, or neurasthenia, as it is popularly termed, a widespread condition, especially in America, where the strain of life is greater than elsewhere. Competition, a desire to go beyond one's fellows in achievement, working beyond the strength, together with lack of care of the physical system, all conspire to keep constant the undue excitement of the nerves that ends in exhaustion. Children born of nervous parents, with weak nerv-

ous systems, should be fortified against the risks of inheritance by hygienic measures, during their developmental period, strengthening in every way their physical and mental endowments. Even those well developed in this respect should husband his or her resources—always keeping a reserve fund by avoiding undue fatigue, spending plenty of time in sleep, taking care of the body, and arranging for intervals of rest that shall include change of scene and environment.

Above all, cultivate the habit of happiness. Whatever else you may neglect, do not neglect that, for the happy habit is the greatest treasure that any individual can possess. Happiness depends largely upon physical conditions. With poor health, perfect happiness rarely exists; therefore it is your duty to be healthy, and the possession of health is in the majority of cases a matter of personal endeavor. But although the physical state is important in health, yet the physical is dominated by the mental, and if you resolve to be happy, you can succeed.

No surer road to personal happiness can be

found than endeavoring to make others happy. If you find it difficult to be cheerful, there is more need to look to your surroundings. Read none but cheerful books; cultivate cheerful acquaintances. You will be amply repaid for your endeavors to cultivate the habit of happiness. From the standpoint of health, it is a profitable proceeding, for joy quickens the circulation. You can get the happiness habit if you wish to, and it is your duty to yourself and those around you to do so. If the clouds are lowering, do not give way to depression. Rouse yourself. Look for the rift in the clouds, disclosing the little patch of blue, and hope for the triumph of fair weather over foul. Even if you do not attain the degree of happiness you anticipated, you will find yourself improved, mentally, morally and physically. Get the habit, remembering that "a happy and contented mind is a continual feast."

And now, in conclusion, we would ask the reader to carefully consider the facts herein set forth. It will amply repay you to do so, for the matter at stake is a weighty one. The preservation of health is a DUTY that each

member of the human family owes to self and friends.

Our purpose in this work has been to show people that they can, if they will, be their own physicians—that the preservation of their health is in their own hands. Thoroughly cleansing the system by flushing the colon is a simple, common sense method of treating constipation, easy of application, thoroughly hygienic in theory, and, beyond all question, immensely beneficial in practice. Thousands of grateful people can testify to its efficiency.

The "J. B. L. Cascade" is the most satisfactory and effective appliance for flushing the intestinal canal that has yet been invented. It is the outcome of years of patient toil and thought, but the thoroughly satisfactory results obtained from it, and the enthusiastic encomiums lavished upon it by its beneficiaries are regarded by the inventor as an ample and commensurate reward (not wholly undeserved) for the mental labor involved in its successful evolution.

Its simplicity is such that it can be manipulated by any intelligent child, and its price, by

comparison with its virtues, is insignificant. With this perfected apparatus, and the J. B. L. Cleansing Tonic, any parent can constitute himself the benefactor of his family, and by following the directions for treating constipation described in this work, can successfully combat it—and all at a trifling cost. But more than that, he can, by periodical use of the "Cascade," so improve the physical condition of himself and family, that they will forget what sickness is, and rejoice in that exhilaration of spirit that only comes with perfect health.

Our system of treatment is *true* in philosophy, in *harmony* with Nature, and thoroughly rational in practice.

Those under thirty should keep sharp watch on their intestines. It will pay! In young women where good looks are of consideration, they are insuring against pallid, unhealthy skins, pimples and other facial blemishes.

Youth reacts more promptly and favorably to simple remedies that are worthless in later years because youth has strength, while age is weak.

PART IX

APPENDIX

WHAT TO DO IN ACCIDENTS

By Major Chas. G. Percival, M.D.

In accident prompt "first aid" for a slight injury may often prevent a serious one, or save life.

First aid is not intended to take the place of a physician's services. Whenever there is a serious injury, a doctor should always be summoned. There are times when a few minutes' delay may mean the loss of a life.

To give first aid, first examine to decide what must be done, and to see if the injuries are serious. If conscious, this is easily ascertained. If unconscious, the nature of the accident will decide the seriousness. If in no danger, a more careful examination should be made as to location and nature of the injury. Make sure that no bones have been broken before moving. Often a glance will show. Undo the clothing to determine the amount and source of bleeding.

If unconscious, note the color of face, and condition of skin, manner of breathing, nature of pulse and pupils. If bleeding is rapid stop it before making further examination. If not sufficient to place in immediate danger, proceed along these lines:

Make comfortable until a doctor arrives. Give messenger a complete description of the nature and extent of the injury. If in a dangerous place or exposed to severe weather, move, taking all possible precautions to avoid increasing the injury, especially if there are broken bones.

Loosen tight collars or belts. Keep lying down or resting comfortably in a sitting position. Lower the head and let lie horizontally for pale face. If the face is flushed, raise head on a folded coat. If vomiting occurs, turn the head to one side. Do not try to force unconscious persons to drink water or stimulants they cannot swallow.

In removing clothing, take off from the sound side first, and avoid the danger of disturbing a fracture. Cut clothing up the seams when necessary to examine an injured or

crushed limb. Check all hemorrhages before attending to anything else. Keep warm—(of great importance) and allow sufficient air. Keep the crowd back.

FIRST AID KIT FOR THE HOME

The following supplies should be included in the camp, home and first aid kit:
Aromatic spirits of ammonia, 2 oz. with a rubber cork.
Antiseptic gauze, 4 small packages; absorbent cotton, ½ lb.
Roller bandages, 8 (4 large and 4 small).
Iodine swabs (12) and Carbolized vaseline, 1 jar.
Pins, ordinary and safety; scissors, blunt and curved.
Olive oil, 4 oz., lime water, 8 oz. and Mustard, 4 oz.
Glass and spoon and Camel's hair brushes, (2).

Shock may be due to severe bleeding, abdominal injuries, fractures, burns and scalds, excessive cold, gun shot wounds, severe cuts and bruises.

Those suffering from severe shock lie in a drowsy condition but not totally unconscious. Limbs are limp and skin pale and cold; temperature below normal and barely noticeable; breathing shallow; often severe thirst, especially if caused by bleeding; usually accompanied by vomiting and hiccoughs. Shock is usually recoverable but in severe cases, death may result, as in extensive superficial burns of children or the aged. Shock may not be severe enough as to include all the symptoms mentioned. Unless slight, send for a doctor. Heat, position and stimulants are the first aid remedies.

Heat is the most valuable. Electric pads, hot water bags, and glass bottles are good. Hot bricks and flat irons are also useful but use so as to prevent burns. Test and cover with protective layers of cloth or paper. In applying, place between legs, at outer sides and between body and arms. A hot water bag over the heart acts as a special stimulant. Loss of body heat always increases shock. Never remove more clothing than is necessary. Rub the limbs toward the body. Place on back with head low so that the blood will run toward brain. Raise the feet. Never raise head. The best first aid stimulant is aromatic spirits of ammonia, a half teaspoonful in one-half glass of water, preferably hot. Other good stimulants are hot black coffee, hot tea, or hot water. Repeat in half an hour. Whiskey and brandy are injurious. Never give an unconscious person stimulant by the mouth.

Aromatic spirits of ammonia, ordinary aqua-ammonia or smelling salts may be used. Strong ammonia should be diluted with water. An inhaled stimulant is particularly useful for the unconscious, because they are unable to swallow.

A severely shocked person should not be moved until recovered to some extent. First aid should be given before moving. Clothing should be loosened at neck, chest or abdomen during transportation. Do not remove clothing, as it increases shock. All serious cases should be carried on stretchers, which can be made with two or three coats and a pair of poles. Turn coat sleeves inside out and place on the ground with the lower edges touching. Pass the poles through the sleeves on each side and button, with the buttoned side turned down.

In carrying the patient up hill, follow these rules: *Feet first:* After severe bleeding, fracture of lower limbs, fainting, shock, or if face is very pale. *Head first:* In cases of apoplexy, sunstroke, fracture of the skull, or if face is flushed. Keep stretcher as level as possible.

If able to sit up and steady himself by placing his arms around the bearers' necks, carry in the "lady's chair". Each bearer should grasp his left wrist in his right and the other bearer's right wrist in his left hand, knuckles uppermost. Then stoop and place the chair under person who steadies himself by placing his arms around their necks.

TO PREVENT INFECTION OF WOUNDS

Severe wounds may cause considerable damage to the muscles, bones, blood vessels, or internal organs, with possibility of severe inflammation. Danger of infection exists, therefore all wounds must be handled carefully. Even a pin scratch has been known to result in death.

Heat kills bacteria. All dressings, instruments used in dressings, should be first heated, by boiling. If wound is deep, or of a considerable surface, send for a doctor. Look out for shock and treat. Do not touch the wound. Exposure to the air is much safer than application of anything which is not *surgically clean.* Apply a sterile dressing at once, and bandage firmly in place.

Water, unless boiled is apt to contain germs. Too strong a solution of mercury or carbolic acid will destroy the body cells which dispose of the pus germs before they kill the latter and should never be used. Hydrogen peroxide is not

strong enough. Iodine is of value, if applied in a 3% solution immediately and not later than two hours after injury is received.

Never pour it into a wound. Use a camel's hair brush or a tuft of cotton on a stick. Never suck a wound, as dangerous pus germs are always in the mouth. Squeeze well at the sides. Adhesive plaster is unsafe. With much bleeding put on a layer of absorbent cotton over the compress (pad) before bandaging. A first aid packet should always be used in preference to anything else. The next best is antiseptic gauze. If at all serious call a doctor. Always examine the article which inflicted the injury to determine if the end may have broken off in the wound.

While waiting for the doctor, twist a small amount of cotton around the end of a toothpick, dip in iodine and push down to the bottom of the wound and work the iodine thoroughly into it. Paint surface and apply a sterile dressing.

In bleeding or hemorrhage the blood is carried through the body by three blood vessels, which are divided into (1) arteries, (2) capillaries, (3) veins.

The most dangerous form of bleeding is when an artery is cut and red blood spurts. Unless checked promptly patient will bleed to death. This can be stopped temporarily by pressure on the artery between the cut and the heart, until a tourniquet can be improvised. In all cases of severe bleeding, secure a doctor at once, but do not delay treatment.

In a cut artery, remember the flow of blood is away from the heart and that it is necessary to apply pressure between the cut and the heart. PRESS ON THE ARTERY ON THE NEAR OR HEART SIDE AS CLOSE TO THE BLEEDING POINT AS POSSIBLE. In pressing it is necessary to select a point where a bone will give a hard surface to press against.

When a vein is cut there is a continuous flow instead of in spurts. Venous blod is a dark bluish red color easily distinguishable from the bright red arterial blood.

In *wounds with severe bleeding,* first check the bleeding. Lay patient down, raise wounded part and keep the head low so that brain will get as much blood as possible. Prevent violent movements. When bleeding has ceased, the injured person should remain quiet. Give plenty of fresh air, cover warmly and put hot water bottles around. Stimulants are undesirable. Do not give them until bleeding is checked.

In a state of collapse from loss of blood, death may often be prevented by forcing the blood into the body from the limbs, by raising feet and bandaging legs from toes to body and arms from tips of fingers to arm pits with roller bandages.

For *slight burns,* exclude air by thin paste of water and baking soda, starch or flour. Ordinary vaseline or carbolized vaseline, olive oil, fresh lard or cream may be used. Smear over burn and on cloth to cover it. Hold dressing in place with light bandage. In second and third degree burns, a doctor should always be called, as there is severe shock and pain. In removing the clothing care should be taken as the clothing is apt to stick to injured surfaces. Cut it away. The portions which remain fast may be softened later, with oil or warm water and carefully removed.

Acid burns should be washed under flowing water and neutralized with an alkali, or solution of baking soda or soap suds. Lime water is excellent. For acid in the eye, wash out as quickly as possible with water and follow with lime water or bicarbonate of soda. For carbolic acid burns, pour on alcohol freely. Wash off *alkali burns* as quickly as possible under running water. Neutralize with vinegar, lemon juice or cider. Eye burns should be washed with a weak solution of vinegar and water or olive oil. Treat like other burns. In severe burns always see doctor, particularly when it is an eye case.

Great caution should be observed in approaching one who has received an electric shock and is still in contact with a live wire. Do not touch with bare hands. Rubber gloves are the best protection. Take hold of the coat or skirt with hands inside of sleeves of a coat and remove from the wire with a quick jerk, use rubber overshoes or rubber raincoat to insulate the hands. If the ground is wet, stand on a dry board or newspapers. If the wire is lying on the victim, brush away with a dry stick. Never use a wet stick or anything made of metal. Don't approach closer than 18 inches. When clear of wire start the prone pressure method of resuscitation at once. Delay may mean death. Electrical burns require a doctor. In the meantime use the first aid methods for burns.

In *heat exhaustion* send for a doctor. Remove patient to a cool place and lay down in a comfortable position with clothing loosened. Do not apply cold externally, give small

quantities of cold water. Stimulants such as tea, coffee or aromatic spirits of ammonia should be given. Keep up bodily warmth.

For *frostbite and freezing,* rub frozen part with snow or cold water. Then use warm water gradually. Never apply heat immediately. It may result in mortification of the frozen part. In freezing, a condition similar to a local frostbite prevails over the greater part of the body. To treat take into a cold room, rub limbs toward body with cloths wet in cool water. Increase temperature of room gradually. Cloths should be wet in warmer and warmer water. As soon as conscious and can swallow give aromatic spirits of ammonia in water, or tea or coffee. It is dangerous to place before open fire or in hot bath until patient begins to recover. Increased pulse, better breathing and more warmth and color in skin show recovery.

Often a *bruise* is the least serious part of an injury. Make sure that there is no other injury, as broken bones. Bruises of the chest and abdomen often accompany internal injuries. These severe bruises require the immediate attention of a doctor. If shock is severe after a bruise of the abdomen or chest there is serious danger of internal injuries.

A handkerchief wrung out in ice water or an icebag should be applied immediately in *black eyes.* The ice water constantly renewed, thus combining the effects of both cold and moisture. Keep up for an hour. It will prevent discoloration. If the flesh has become black, applications of hot water for half an hour, three times a day, are good. If there is pain, see a physician to make sure that there is no eye injury.

Wash *blisters* thoroughly in hot water, pass a clean needle through a flame and prick at the side, gently pressing out the fluid until flat.

For *strains* use rest, and gentle rubbing with alcohol and water, equal parts, arnica, liniment or witch hazel. The rubbing should be vigorous. Later hot water bags will often give relief. When the pain is reduced, gentle movements should be practiced. Always call a doctor when severe or in doubt. Begin treatment at once. Rest in order not to do more damage by rubbing the injured joint surfaces together. Less blood will come to the part if elevated. Application of heat or cold will contract the blood vessels and limit the escape of blood. Cloths wrung out in very hot or very cold water

should be applied. Place injured part under a cold or hot water tap. Use hot instead of cold water for children, or old people or when there is shock. Either heat or cold should be applied long enough to get the full benefit, that is 24 to 48 hours. A severe sprain, especially of the ankle, requires a physician. Under X-Ray they often prove to be fractures.

Do not try to put a dislocated joint back if a doctor can be reached. Cover with cloths wrung out in very hot or cold water. Apply pad under armpit and put arm in wide sling. Dislocation of the second joint of the thumb requires a doctor. Others are less difficult. A dislocated finger should be grasped firmly on the hand side. The end of the finger can then be pulled straight out away from hand and bone will usually slip into place.

If cinder or any other object gets in the eye, avoid rubbing as it drives the object more deeply into the eye or lid and makes it harder to remove. First close the eye so that tears will accumulate and the object will be washed out or loosened and easy to remove. If this fails, turn up lid carefully over a match or toothpick and brush across it carefully with the corner of a clean handkerchief, or absorbent cotton. If this fails, see a doctor.

If a small object becomes wedged in ear, care must be taken not to push it in farther by awkward attempts to remove. Tweezers may succeed, otherwise see a doctor.

Children often get peas or beans in their noses. Try to dislodge by having them blow through the nose with the other nostril closed. If this fails, call a doctor before any swelling occurs, which will make removal difficult.

POISONING

In carbolic acid, creosote, lysol and sulpho naphthol cases, give epsom salts, castor and olive oil, three or four eggs or alcohol which neutralizes it.

In corrosive sublimate (mercury, bichloride) give freely of whites of egg, beaten up in water, and then empty stomach and repeat the eggs.

For iodine cases give starch and water, bread and water, empty stomach and repeat milk, white of egg and stimulants.

Lye, caustic potash, caustic soda and ammonia cases, give olive oil followed by vinegar and lemon juice.

Ptomaine cases:—Any emetic such as mustard or salt water. When stomach is empty give large dose of castor oil

and strong coffee. Keep warm and avoid food until recovery.

Phosphorus, matches, rat poison:—Avoid oils, give emetics, clean out stomach, then give magnesia or chalk, and mucilaginous drinks.

Toadstools:—Give emetics, castor oil, cathartics, stimulants, external heat.

Wood Alcohol:—Use emetics and apply heat over heart and to hands and feet. Give strong coffee, inhale ammonia, and call a doctor.

Lead, paints, etc.:—Empty stomach; give tablespoonful Epsom or Glauber salts in glass of water, raw white of egg and castor oil.

Arsenic, Paris Green:—Give emetics at once; then 4 ounces hydrated oxide of iron and magnesia at one dose. Raw eggs, beaten up in sweet milk, freely followed by sweet oil. Keep extremities warm and use stimulants. Magnesia may be used.

Colonic Cleanliness.*

By Royal S. Copeland, M.D.
U. S. Senator from New York. Former Commissioner of Health of City of New York.

During the past decade, much of my time has been spent in an unusual medical relationship with great numbers of laymen. These contacts have greatly changed my views regarding many medical problems.

In olden times, before specialists arrived, physicians and their clientele enjoyed a remarkable personal intimacy. In many ways this was the outstanding social feature of medical practice. One of the beneficial effects of that relationship was the readiness with which patients related to the doctor all their physical worries, many of them disturbances which had not yet reached the dignity of real illness.

This perfectly natural interchange of confession and advice no longer prevails. In the cities, certainly, every physician is but one member of what may be called a "staff" of medical consultants. A given household has its surgeon, its gynecologist, its obstetrician, its opthalmologist, its aurist and laryngologist, its pediatrist, its dermatologist, is laboraory and X-Ray expers, its dentists, and incidentally its internist. The last named may be considered the "family physician." But in no sense does he occupy the exalted position of Father Confessor in health matters that the old time practitioner filled and honored.

As I view it, it is a great pity that the present system has become so popular. Nobody can regret the development of the specialists—humanity is benefited daily by the expert advice of these learned men. My complaint is not that I bemoan the

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* *A chapter from Dr. Copeland's book: "Random Thoughts of a Busy Doctor—Comments on Medicine of Interest Only to My Colleagues in the Profession."*

advent of the specialist, but it is that I lament the decline in importance in the lay mind of the necessity for almost daily consultation with that premier physician, the general practitioner. In every sense, as I see it, the family doctor should be the friend, counselor and guide. There are a hundred reasons for this appeal. For the present let me suggest one reason:

Physicians are all agreed that constipation and fermentation in the colon and lower bowel are largely responsible for loss of efficiency, for discomfort and lowered vitality. Whose business is it to make people see this? How and by whom is the individual to be given the instruction he needs in order to be brought up to a state of perfect health and social usefulness?

The Commissioner of Health cannot do it because it is his business to guard the *public* health, to elevate the standards of community health. He has little or nothing to do with individual health, unless it is related to the community as a whole.

The surgeon deals with the end product of the abnormal colonic condition. He removes the diseased appendix, but this skillful operation in no way benefits the dozens of relatives and friends of the patient who likewise may have infected and fermenting colons.

Those of us who have access to the columns of the lay press do our best to spread the gospel of good health and disease prevention. But we cannot reach the last individual seeking sensible advice. We, too, are "crying in the wilderness," and, with all our efforts, carrying the message only to the limited number who read and pass it on to others.

In the last analysis, the old fashioned family doctor is the man who should be preaching and teaching the value of right living. He should be advising his patients how to get rid of the nagging things which make for sickness and death. I plead for a revival of that high office.

If it is proper to say so, I suggest that the discontinuance of the old time relationship between physician and patient has been to the professional disadvantage of the doctor. Not alone has society suffered but the profession, too, has lost ground. In this very matter, for instance, of the connection between colonic infection and bad health, has not the average present day physician failed to grasp the importance of attention to a region of the body almost universally neglected?

In the practice of medicine, we deal so much with effects

that causes are too likely to be overlooked. This is not to be wondered at, because the sufferings and clamore of the patient demand immediate attention. Then, when relief comes, he slips away and there is no opportunity to study the causative factors. The patient isn't seen again until there is a recurrence of the acute and painful symptoms.

There is great professional danger in what may develop from repeated experiences of this sort. The medical man may have less and less incentive to study causes. More and more is the busy doctor likely to devote himself to the development of skill in the relief of human suffering, neglecting to study the removal of causes. I hope this calamity will not come upon us, but, frankly, are there not indications that our profession is halting at the fork of the road and looking at the downward path?

Why do I have a suspicion that we are dodging causes these days and dealing to a great extent with effects?

One example of this is our failure to pay serious attention to the correction of what I may call the insanitary condition of the intestinal tract. A health official who disregarded pest-infested and disease-breeding basements would not be worthy the name. What can we say of a trained physician who appears oblivious to the festering and putrefying mass in the human colon? Is he living up to the high purpose of our noble calling?

As I see it, the only excuse a doctor can have for failing to correct this state of affairs in one of his patients is because he has not the confidence of his patient. In consequence, he has no control over the welfare of that infected person in imminent danger of physical disaster if there is not a clean up of the colonic condition.

It is not for me to say what the doctor should do under such circumstances. The old time physician would have dismissed the patient at once. However, the Code, as I recall it, says the physician "should unite tenderness, cheerfulness and firmness and thus inspire all sufferers with gratitude, respect and confidence." If the doctor makes a real effort by kind but firm words to impress on the patient what is for his good, the effort is likely to succeed, but there can be no real effort unless there is conviction in the heart of the doctor himself.

As regards the importance of colonic cleanliness, personally I have no doubt. Believing this, it is not difficult to get the patient to share my hope of its benefits. Certainly, there

can be no expectation of health, vigor and sustained effort without removing from the system the poisonous products of more or less incomplete digestion. Any sensible man or woman should be made to see this.

If correction of the diet, attention to exercise, and all the other simple hygienic rules which have to do with good health, will overcome the habit of constipation and intestinal stasis, all is well and good. But if through failure of attention to these rules, or through some undiscovered cause there is failure of the intestinal tract to function normally, the bowel becomes occluded or partially so. Then there must be taken the necessary steps to empty and clean the tube.

How is this to be done?

No good doctor will prescribe salts or castor oil to be taken habitually. To make a slave of the rectum by this practice has long been decried. As I view it, the simplest, safest, and most natural way to cleanse the bowel is by the same method we have always regarded as the simplest, safest and most natural way of cleansing the skin, our clothing, the windows and floor, and everything else we want clean. Washing with pure, soft water is the first thing we should think of, of course.

The anus is so constructed that in health it is almost as permeable as the lips and mouth. It is not quite so easily entered of course. The sphincter muscle controls it, as Nature intended. But this safe-guarding band can be coaxed to relax, and through the small passage-way, without bruise or abuse, a proper tube can be passed into the rectum.

I confess, the idea of "high irrigation," depending on a long tube passed up the bowel, has never appealed to me. It has seemed to me unsafe, except in very skilled hands, of course, to push a tube up the bowel, not knowing exactly where that tube is going. Unless it is stiff enough to retain its general direction it is sure to coil up and defeat the purpose of its use. If it is stiff and firm it may be hard enough to do harm to delicate tissues.

On the contrary, within the area of its level, water passed through a short tube, just long enough to reach the free space of the rectum, will find its way by its natural flow into every part and crevice of the bowel. It will exert its cleansing power upon all the soluble material it reaches.

Water can be run into the ear under such pressure and with such force behind it as to cause great pain and to do

great harm. On the other hand, it can be run into the ear so gently and gradually as to cause no ill-feeling and to do no harm whatever.

That is just as true of the use of water for colonic cleansing. By the use of a short tube, the tip made to permit the escape of water at the sides, instead of the point, with the flow controlled so as to avoid the bearing-down sensation which follows rapid injection, and the supply of water sufficient to float as much as possible of the rectal and colonic space, the ideal conditions have been met.

There can be no more than accustomed and proper distention of the intestinal tissues by this gentle and gradual inflow of fluid. The water may contain remedial or antiseptic agents, but above all things, the water must be pure and uncontaminated. I need not enlarge upon this point.

This method of cleansing the lower bowel has been called the "Internal Bath." This is not a bad name for the treatment. It suggests, too, exactly what I have in mind, that cleanliness of the intestines is, in a sense, a part of the natural toilet of a clean person. At least, it is true that nobody can be really clean whose rectum is the receptacle for a foul and putrefying mass of material.

In the nature of things, the chemistry of the body will leave a certain amount of waste which is unpleasant to the senses. But there is no reason why this waste should be permitted to become the culture and medium in which breed and grow teeming millions of bacteria.

Modern life and eating tend to intestinal stasis. This is a misfortune and every effort should be made to correct, so far as possible, by example and education, every evil effect of civilization. But in seeking ultimate causes we cannot disregard immediate effects. I have admitted that already.

Until we find a way to correct the faulty practices of the human family, we must continue to deal with the bad effects of these practices. To this end, if we cannot prevent the formation of dangerous waste material, we can spare our patient the menace of its presence within the body. By the internal bath we can wash it out and thus remove the culture medium for the growth of harmful bacterial agents.

It would be folly to disregard what proper living will do in the development of normal intestinal action. But until right living is universal there will be many cases of intestinal stasis. Artificial means must needs be found to hasten the

fæcal stream, causing it to carry away the waste which is dangerous so long as it lingers in the bowel. This, as I see it, is why the internal bath must not be disregarded by the thoughtful physician.

The evil effects coming from the absorption of the poisons developed by intestinal putrefaction are not limited to physical symptoms. There may be the most profound effects upon the nervous system and even upon the brain.

The work done by Cotton and Draper at the New Jersey State Hospital should be familiar to every member of the profession. By ridding the system of centers of infection, sanity has been restored. The results of these physicians have been amazing. The discharge of cured patients from that institution is one of the outstanding victories of modern medicine.

The Trenton doctors have found that absorption from an infected colon is the chief cause for functional insanity. In their cases, of course, these are pus infections, but before there was pus the way had been prepared by the germs of fermentation. Had the colon been kept clean, there could never have arisen a pathological condition sufficient to undermine the mind itself.

Almost invariably the common cold, tonsillitis, bronchitis, or influenza, is found in one who has first developed constipation or intestinal fermentation. The powers of resistance have been lowered by the absorption of intestinal poisons. I need not enlarge upon this phase of the subject. Every physician will agree at once that sound health and colonic involvement are not compatible.

Assuming then that we are all agreed as to the importance of cleanliness of the colon and rectum, as well as the importance of other accepted ideas in medicine, how are we to get the facts to the individual? We are back to our original thesis: How and by whom is the individual to be given the instruction he needs in order to be brought up to a state of perfect health and social usefulness?

This is a medical, a social, and an individual problem which must be solved for the good of the race.

PART X

Treatment of Disease.

Auto-Intoxication.

Is a disease of the present period, the results of the nervous sedentary lives we lead; and has the added danger that it takes a heavy toll in physical and mental vigor from nearly every one of us. Its marked characteristics are *tired, listless, dull languid* feelings, off days, (wasted days) with no apparent real reasons: days charged with *gloomy, moody thoughts* and *snappy irritable actions.*

These draggy, irritable days occur even after a good night's rest, and it is an effort to concentrate even on petty and routine affairs of business in this age and generation of labor-saving devices and comfort and recreation.

Never before were men and women so abundantly blessed and their labors lightened;

a day of the radio, the electric light, the automobile, the daily paper, the moving picture film and a hundred other pleasure giving and labor-saving devices.

Though we have cut down the physical strain we have increased our mental strain, living, working and recreating with our nerves—but failing to rest the physical body. We rob our bodies of rest and sleep and abuse our stomachs with rich spicy, heavy foods and harmful liquids. We over-feed the body and then starve it by a lack of proper exercise because we have overlooked the normal simple lives that was lead by our ancestors, we have ceased to function easily, properly and as simply, as they did and we should. In 90% of cases, our food remains in the alimentary tract undigested for days, fermenting poisons and setting up all sorts of *intestinal toxemia* or *auto-intoxication,* which seriously affect our lives by being carried through the entire body structure, inducing *headaches, lassitude fatigue* and *derangement* of the *entire nervous system.* The results are *colds, rheumatism, neurasthenia* and a score of other dangerous diseases. Few are

free from *auto-intoxication*—the fore runner of most diseases.

Treatment.

A normal life, plain food, plenty of pure drinking water, ample exercise in pure air, will help to correct and eliminate.

Internal bathing not only prevents the collection and stoppage of fermenting faecal matter in the intestinal tract, but washes away, dilutes and weakens these intestinal poisons and finally eliminates them.

The best way to accomplish this is by the mechanical action of pure warm water such as the J. B. L. Cascade (Internal Bath) provides. It takes 15 minutes and its repeated action soon bring comfort and relief.

Heart Disease.

The numerous affections of the heart are organic and functional, the former being more serious; though seventy-five per cent are functional. The most common, and the most serious are pericarditis (inflammation of heart-envelope), and valvular insufficiency (imperfect closure of valvues). The functional disturb-

ances are (almost without exception) due to digestive difficulties and nervousness. In the first class, if well advanced and patient past meridian of life, recovery is improbable, although life may be considerably prolonged. The second class may be cured, with reasonable certainty, by removing the cause.

Treatment.

In pericarditis, the symptoms are fever and sharp pain under the left nipple, radiating to the armpit, use the "Cascade" daily with the Cleansing Tonic while the condition is acute; the wet sheet should be employed daily, the temperature varying with the degree of fever. It is usually the sequel of rheumatism. In valvular insufficiency, caused by deposits upon the valves of the heart, the symptoms principally are difficulty of respiration, not much pain, but a feeling of uneasiness in the heart region, and a peculiar sound termed "the murmur." The use of the "Cascade" will sometimes effect wonders as it arrests all further deposition of impurities in the blood, thus preventing any further accumulation on the

valves, while the increased liquidity and purity of the blood enables it to re-absorb the existing deposits and thus restore normal action. Functional difficulties chiefly result from digestive troubles, due to fermentation of food in the stomach and consequent formation of gas frequently collect in large quantities, and by actual pressure impeding the heart's action. The chief symptoms are shortness of breath, palpitation, and great irregularity of the heart's action. In such cases, a faithful observance of the formula of treatment for dyspepsia will accomplish surprising results.

Anemia.

A disease of the blood, characterized by a deficiency of the red corpuscles. It more frequently affects women than men; the very young and the very old are most subject to it, and especially, if of a nervous, irritable or hysterical disposition. Among the exciting causes are defective hygiene, poor diet, want of, or excessive exercise, grief, or other strong emotions. The symptoms are great pallor, muscular weakness, frequent pulse, diz-

ziness, breathlessness on slight exertion and fainting. Another form of this trouble is known as Essential Anemia, or Progressive Pernicious Anemia, which almost invariably terminates in death.

Treatment.

The blood is formed from the food eaten, the importance of getting the digestive function into good working order is apparent. Also to supply those elements to the system that the condition of the blood shows missing and necessary, all of which can be furnished by proper selected diet. The body must be also "cleansed internally," by means of the "Cascade" with the Cleansing Tonic, using it as frequently as the condition of the patient will permit, without unduly taxing the system. The skin should be kept active by frequent warm or tepid baths, followed by gentle friction with soft towel. A half pint of hot water should be slowly sipped on rising, and no food for at least half an hour. To promote circulation, gentle exercise or if not too weak, massage. Eggs should be freely partaken

of preferable raw, beaten in milk or lightly boiled or poached. Give milk in quantities of from two to four ounces at a time. Sour or clotted milk is particularly good as it tends to prevent intestinal fermentation and thereby prompt digestion. Whole wheat, or bran once a day for the phosphates contained. Iron is the element most needed, and can be obtained first and foremost from spinach, beets, tomatoes, dark skinned grapes and plums. Most important is the practice of deep breathing to thoroughly oxygenate the blood.

Blood Poisoning.

May arise from various causes, such as infection of a wound, contact with some irritating vegetable substance like poison ivy, inhaling noxious gases, or handling copper, lead, and paint; but the most common cause is re-absorption into the blood, through the intestinal walls, of the waste products of the system; in fact, ninety per cent of such cases are due to this cause as a virulent poison introduced in the rectum has been known to cause death in a rabbit within two minutes, the absorptive char-

acter of the walls of the colon may be faintly estimated. Though the toxic substances generated in the body are not so rapid in their action, they are none the less deadly. It is to this that most skin diseases, together with rheumatism, gout, neuralgia and a host of other troubles, are undoubtedly due.

Treatment.

Clean out the human cesspool by frequent use of the "Cascade," and a double quantity of the Cleansing Tonic, thus preventing any further deposition of these impure substances in the blood, and continue to keep it clean by more or less constant use. In acute cases, take frequent Turkish baths, to eliminate through the skin, and keep it active by frequent warm baths and vigorous friction with a moderately coarse towel. The diet should be plain, never eating to excess, and drink freely of water, to keep the blood liquid, and practice the habit of breathing deeply, to oxygenate the blood.

Consumption.

This is the most widespread and destructive

to human life. Over 3,000,000 people die annually from it. It is not only an acquired disease, but surely preventable, and in its early stages, curable. In the majority of cases it commences just beneath the collar bone, because here is the part of the lung that is least used, the reserve portion, not much used in ordinary breathing. In most occupations the shoulders are drawn forward, thus cramping the lungs, and weakening them, then the consumption bacillus finds lodgment. A person with healthy lungs might inhale millions of tubercle bacilli daily with impunity, hence to prevent consumption, distend the lungs fully, by deep breathing, hundreds of times daily.

Treatment.

If possible, go to some quiet country place where you can be sure of the three following essentials — a dry location, pure air, and a plentiful supply of fresh, rich milk. Live out of doors or sleep with all doors and windows wide open. If this is impossible carry out the above treatment as closely as possible at your home. It is absolutely necessary to improve

the nutrition of the body, to stimulate the digestion and absorbent functions of the stomach and intestines. Flushing the colon with the "Cascade" and the Cleansing Tonic is the first step to improve nutrition. This unlocks the secretions and prepares the stomach for food.

Next, flush the stomach. Then give the stomach food that the organs can digest and assimilate. For this purpose nothing equals good, rich fresh milk. Live on milk exclusively for a month or two, drinking slowly a glass full every half hour—the object being to supply the body with food easily digested, quickly absorbed and highly nourishing; yet at the same time, in small quantities, that will not over-tax the stomach. You will quickly gain in weight, and after a month or two you may commence on solid foods partly, choosing such articles as the Salisbury steak (see treatment for obesity), pure olive oil, sweet cream, eggs, toasted whole wheat bread, bran muffins, etc. An "external bath" for those able to walk about, and a "sponge off" for those confined to bed, must not be neglected. The skin exudes

more matter and is more likely to become clogged in disease than in health. Practice deep breathing assiduously. Improved nutrition is the salvation, and that must come through exercise, diet and fresh air. Spend all the time possible in the open air and in the sun's rays whenever practicable, and pay special attention to the use of the "Cascade." The cure is in one's own hands—depends upon your courage and perseverance.

Gall Stones.

Are the result of arrested secretion of bile, usually through congestion of the liver, when the substances that form bile accumulate and solidify in granules. Hundreds of these continually pass off through the bowels unnoticed; but prolonged congestion causes them to cohere and form larger masses, that, in passing through the bile duct, cause intense pain, which is sometimes mistaken for appendicitis.

Treatment.

As it is only in passing, that their presence becomes known, all that can be done is to favor

their passage by copious fomentations of hot water and diligent use of the "Cascade." Sometimes it is impossible for the stone to pass when it has to be removed surgically. The regular use of the "Cascade," with the Cleansing Tonic, will frequently prevent their formation. At the first symptoms of pain in the region of the liver, follow the directions for treatment of that organ, especially the exercises, and drink freely of olive oil.

Hernia or Rupture.

The escape of some portion of the viscera through an abnormal opening. Hernia takes its particular name from the locality in which the protusion occurs, although the inguinal is the most common form. The dynamic force of foul gases engendered in the system is a frequent cause. The mechanical pressure exerted by an overloaded colon in the limited space of the abdominal cavity is responsible for many cases. The treatment is obvious—use the "Cascade" faithfully, and, the cause being removed, reduction is easy, and if the colon be kept clean, a properly adjusted truss will

soon completely cure it. In severe cases surgery is necessary.

Inebriety.

Is responsible for many of the ills of the present generation, in the form of transmitted constitutional weakness, to say nothing of functional derangement and organic destruction, of which it is a potent and direct cause.

There are two grave reasons why alcohol should not be taken into the system, or, if at all, in very minute quantities and at distant intervals. The first is the moral reason, because it undermines and destroys the mentality and morality. Alcohol has the peculiar effect upon the brain of stimulating the baser qualities and blunting the finer ones. The second is the physical reason, see "The Diet Question." Alcoholism as a fixed habit, must be treated as a disease.

Treatment.

Get the alcohol out of the system by flushing the colon daily with the "Cascade" which will help you to stop drinking (easier advised than accomplished), then sweat it out by a daily

Turkish bath (see end of book) or a Turkish bath one day and a wet sheet pack the next.

Second, sip a cupful of hot water not less than half an hour before each meal. Then use the "Cascade" with Cleansing Tonic. Within a month the alcoholized blood in your veins will have been replaced with good, rich blood, and a cure practically effected.

Catarrh.

Is a disease resulting from cold and fecal infection. Most individuals in our Northern climate are afflicted with it in some form or other. It is easier to prevent than cure. Strong, well developed lungs, a clean colon and skin, and catarrh, are seldom found together in the same body. Perfect lung development and a clean colon will alone effect a permanent cure. Keep the feet warm and dry, never go into a hot room and sit or lie down. Always sleep in a cool, dry atmosphere. It takes two different forms, nasal and throat. The first is caused by inflammation of the membrane of the nasal cavities and air passages, which is followed by ulceration, when Nature, in order

to protect this delicate tissue and preserve the olfactory nerves, throws a tough membrane over the ulcerated condition. This is chronic catarrh.

Treatment.

Use the "Cascade," with a double quantity of Cleansing Tonic, daily with water as hot as can be borne, and guard scrupulously against taking cold. The membrane must next be removed, and for which we most unhesitatingly recommend the J. B. L. Catarrh Balm, and our J. B. L. Inhaler.

Half a lifetime of careful research was devoted to perfecting this admirable preparation, which to-day stands first as an effective agent in removing this membranous obstruction. Composed of several kinds of oils, it gently but effectually removes the membrane that Nature has built over the inflamed parts, while its emollient character soothes and allays inflammation. These oils are not absorbed into the system, acting only locally.

The method of application is as follows: A small quantity is placed in each nostril, and allowed to dissolve, throwing the head back and

allowing the fluid to pass up the nostrils and into the throat.

There is no case of catarrh so obstinate but will readily yield to this treatment. But more important as a preventive keep the colon clean and pay attention to lung development.

Erysipelas.

Arises from impure blood. A peculiar poison is generated, which shows itself in the form of a red, puffy swelling, closely resembling a blister and feeling like one. The finger pressed upon the inflamed part leaves a white spot. Most usually attacks the face and head. In majority of cases it arises from an obstructed colon, a fermentation being generated there from the long retained fecal matter, consequently a positive treatment is to thoroughly cleanse that organ with the "Cascade," and the Cleansing Tonic. For local application take sour milk and apply to the inflamed parts, or hop yeast mixed with charcoal to the thickness desired. The lactic acid in sour milk is a direct antidote to the poison of erysipelas.

Dyspepsia.

Infection or contagion can never be held responsible for Dyspepsia. It is the penalty which Nature inflicts for violating its physiological laws. Do not be deluded by extravagantly worded advertisements into the belief that any nostrum has been or ever will be invented that can possibly effect an immediate cure. To cure it one must entirely abandon the habits that caused it. Masticate your food thoroughly—allowing the saliva to mix with it—do not bolt it, and then wash down each mouthful with copious draughts of tea, coffee or water. All this superabundance of fluid only distends the stomach and impedes digestion. A change of diet is necessary, but not so essential as a change in the habits of eating. Dyspepsia is more or less catarrh of the stomach. Its lining becomes coated with a slimly mucous that arrests the action of the glands, coats the foods and prevents the gastric juice from acting upon it.

Treatment.

The first week, use the "Cascade" and

Cleansing Tonic every night, the second week, each alternate night; thereafter, as occasion seems to demand. A glass of hot water, not less than half an hour before each meal especially on arising. For breakfast take the juice of two good ripe oranges, followed by a small quantity of whole-wheat or bran cereal, a light boiled or poached egg, and a slice of crisp dry toast or whole-wheat or bran bread. Drink nothing with the meal, but take a glass of hot milk half an hour later. Good, lean beef, mutton, or chicken, broiled or baked, is easily digested and may be eaten moderately at noon. If the stomach is very sensitive, it is better to eat five or six meals a day of a few ounces each time, than to overtax the stomach. Masticate every mouthful of food thoroughly, and practice deep breathing assiduously; both are important aids to digestion.

Rheumatism.

Chronic and acute rheumatism are diseases of the blood. Imperfect nutrition and deficient excretion are primary causes, because the blood becomes loaded with poisonous matter.

The trouble manifests itself in the joints, toes, ankles, knees or hands, but the seat of the disease is elsewhere.

Treatment.

First promote oxidation and increased activity of the liver. The best way to accomplish this is by the daily use of the "Cascade" and Cleansing Tonic, first with hot water, then with cool water, doubling the Cleansing Tonic. Do this twice a day for a week, then once a day for a month. Take a Turkish bath daily for a time to restore the functions of the skin. Rub the disabled joints with J. B. L. Ointment, followed by massage and pressure movements.

In rheumatism great care must be taken as to diet. One must avoid: Pork, veal, turkey, goose, duck, chicken, fried fish or meats, cooked oysters or clams, salted, dried, potted or preserved fish or meats (except fat bacon or ham), crabs, salmon, lobster, rich dishes, gravies, meat extracts, tomatoes, beans, asparagus, mushrooms, candies, rich puddings, pies, pastry, nuts, cheese, coffee, cider, malt liquors,

wines. The diet should consist largely of green vegetables, mutton, whole-wheat bread, toast, eggs, milk and fruit. A cup of hot water, not less than half an hour before breakfast should not be omitted, and several before each meal. Water should be drunk freely between meals in copious quantity and "internal bathing" observed regularly.

Typhoid Fever.

Its chief seat is in the stomach and intestines, particularly the colon, is a foul bacterial disease, and originates in filth. The germs may be acquired by drinking impure water or milk. Once in the system, the bacteria must have decayed matter to feed upon, therefore it is impossible for a person who is clean both inside and out to take typhoid fever, there being no facilities for the germs to breed and multiply.

Treatment.

Knowing the cause, common sense tells us that the first thing to do is to check the multiplication of the germs by removing the putrid matter in which they breed. Use the "Cascade" and double portions of the Cleansing

Tonic, with water as hot as the hand will bear, but not scalding. Retain from ten to fifteen minutes. Next, sweat the patient to open up the pores of the skin, and for this nothing equals the wet sheet pack. Roll patient in sheet wrung out of cold water, on top of this a couple of blankets and a comfortable. At feet place a hot water bottle, on head a turkish towel wrung out of cold water. Give plenty of fresh air. When perspiring freely, take out of pack, wash with warm water and soap, rub down, give a drink of cold water and put to bed. Repeat the injections daily, with tepid water. In cases of extreme weakness the treatment must be modified. Let patient have all the cold water to drink desired and give plenty of fresh air. Use flushings daily, also the external bath, remembering in the latter to use cold water when the fever is high, and health will speedily be restored. Give no food until Nature calls for it and then liquid diet and orange juice.

Bilious Fever.

Generally makes its appearance with one or

more chills, sickness of the stomach and more or less fever. The tongue has ill-looking yellow coat and food is unacceptable. The cause to an intelligent mind, is perfectly clear. The colon is clogged and the acids in the stomach together with an abundance of secretions from the liver, have no outlet. In this condition a slight cold closes up the already overworked pores of the skin and turns the tide of corruption into the stomach, lungs and kidneys, and bilious fever is the result, for, Nature being unable to get rid of the filth by the ordinary methods, resorts to her last expedient, of burning it up.

Treatment.

Is obviously simple. Use "Cascade" with a liberal quantity of Cleansing Tonic and open pores. Wash the stomach, take two or three hot injections daily, and a hot sheet pack. This with baths and rubbing, will cure an ordinary case in about three days. Avoid all drugs. Nature will call for food when it is needed.

Colitis.

If colitis, (inflamation of the colon), with

discharge of mucus, is present the addition of a dram of salt (a level teaspoonful) to a pint of water with warm enema, above 90 degrees is indicated. In fact, Hare *recommends the addition of salt* to all large injections. In the treatment of dysentery he observes that by this means we can get into direct contact with the diseased mucous membrane and there is no doubt whatever that the mere passage of normal salt solution at suitable temperatures over the bowel-wall is of value, for in this manner we remove mucus and pus and so dilute the poisons produced by the germs of the disease that their further actions is largely controlled.

Kellogg says that when a cleansing effect is desired, as in catarrh of the bowels, a mixture of equal parts of carbonate of soda (employed internally to meet the same conditions as bicarbonate) and common salt (1½ drams of each to the quart of water) may be used. The addition of 2 to 3 tablespoonfuls of our Cleansing Tonic often gives wonderful results.

There is eminent authority for the permanent use of the cool enema as far as the splenic flexure in chronic cases of dyschezia given un-

der proper condition and in the proper quantity, not, except under necessity, as an aid to defecation but as an act of cleanliness and health.

Common Colds.

Are very disagreeable and, though not dangerous in themselves, are frequently the cause of serious complications and fore-runners of consumption, pneumonia and catarrh. Due to sudden changes of temperature and germ infection, and by the sudden closing of pores of the skin, thus preventing the escape of those waste matters of the body which Nature has designed should be expelled in that direction. The blood is thus driven inward, causing congestion. If the system is in a sound, healthy condition, with respiration good and colon clean, it should be next to impossible to take cold. If, however, there is a weak spot in the body, the cold will find it, when, if not promptly dealt with, serious results may ensue.

Treatment.

As Constipation is the invariable primary cause of a cold, hence the first thing to do is to

flush the colon. Use the "Cascade" with the Cleansing Tonic daily for at least three days. Do not eat any supper the first night: Next is the Turkish bath (see end of book). It should be taken at night, after which drink a glass of hot lemonade and go to bed, covering the body thoroughly. You will perspire profusely, which is what you need. In the morning take a good tepid bath and rub down, following the directions given for bathing, drink a cup of hot water an hour before breakfast, and let that meal be light, such as Graham, whole wheat bread or Bran muffins; boiled eggs, oatmeal and oranges. You are then ready for business, and with another flushing at night, will find the next morning your cold only a memory.

To keep from taking cold train your body and skin to withstand sudden changes in temperature by frequent external and "internal bathing," breathe through your nose, have nose, throat and teeth examined for bad tonsils, adenoids. Keep your feet warm and dry. Sleep with open windows, cool off gradually when perspiring, wear sensible clothing, and avoid undue exposure to extremes of tempera-

ture. Persons suffering from colds should drink at least 2 quarts of water a day, between meals. Last and not least see your family doctor if your cold persists after all these precautions. When you just get your cold take a J. B. L. Cascade treatment before retiring and one every night until the cold has been eliminated.

Some of the "Tablets" sold as remedies for colds often contain drugs that affect or are bad for the heart and may cause a "Drug Habit." Such tablets should not be used except upon advice of a physician.

La Grippe.

A modern name for influenza. Resembling the ordinary cold but far more violent in its effects. Acute pains in the head and kidneys are symptoms that are usually present. If neglected, it may develop into pneumonia, or consumption. It is both epidemic and contagious.

Treatment.

This disease is almost invariably accompanied by constipation. Consequently, the J. B. L. internal bath, with Cleansing Tonic is

the first remedy. Have the water hot and use daily, for three days at least. Next, relieve the internal congestion by opening the pores of the skin by the Turkish bath at night, drink a glass of hot lemonade, and go to bed warmly covered to make you sweat. On arising drink a cup of hot water, no food but oranges and toast. Two days of this will put La Grippe to flight, but the better plan is to prevent having it by keeping the colon cleansed by use of the "Cascade."

Dysentery.

A disease of the colon caused by the retention of fæcal matter in the folds of colon which inflame the parts until they become dry, then the soft evacuations dry on the sensitive mucous membrane. These secretions produce a peculiar acid, which in its turn breeds amoeba, and these, in the early stages of their existence, eat into the foreign matter and even into the mucous membrane itself, causing what is known as dysentery.

Treatment.

In either the acute or chronic cases, the patient must be treated lying down, with the

hips elevated above the shoulders. For this purpose our Fountain attachment is necessary with the "Cascade." This will relieve the pain and congestion in the lower part of the colon. In acute cases do not let the patient sit up for a moment. Use a bed pan always. Flush the colon with hot water, into which a double portion of Cleansing Tonic has been dissolved, letting it flow gently. After the discharge, follow with an injection of two ounces of mineral oil, which should be retained as long as possible. This is an emollient, and will soothe and heal the ulcerations.

Diarrhoea.

Is simply Nature's method of getting rid of undigested substances in the alimentary tract. After a time the irritation excites the glands to abnormal action to wash out the offending substances, resulting from excessive fermentation. If not relieved, ulceration sets in, and germs breed in the intestines—causing what is known as chronic diarrhoea.

Treatment.

In both varieties is the same. Use the "Cas-

cade," with a liberal amount of Cleansing Tonic until the colon is thoroughly emptied and cleansed. Take warm bath before retiring, followed by a brisk rub down. Be careful in diet—the better plan being to fast for a day or two, until the worst symptoms are past.

Diseases of the Nerves.

Most people imagine that nervousness is the result of too much nerve force, but the opposite is the case. The trouble is a too sensitive battery and inadequate nerve force. The batteries, or nerve centers, are too easily discharged. It is nervous irritability, therefore, that we have to deal with.

The causes are manifold, the restless American nature, neglect of physical training, giving too little time and attention to eating and sleeping, concentrating too much on money getting and business to the neglect of recreation and repose. One of the gravest causes is a constipated colon, which promotes indigestion, and through it, lack of nutrition, thus cutting off the supply of nerve food. The excessive use of tea, coffee, tobacco and alcohol, are

also fruitful causes of this distressing affliction.

Treatment.

Apply the brake to that restless motor within you that is driving you too fast. Step out of the busy stream of life for awhile, let it rush past and take things easy. Flush the colon regularly — remove that great source of nervous irritation, for we have yet to hear of a nervous person that was not constipated.

If you suffer from nervousness, you are dyspeptic, your whole course of life tends to render you so. Follow the treatment, especially the diet, given under "Dyspepsia." Practice deep breathing, for lung development, for strong lung power is never associated with nervousness. Plenty of exercise in the open air, but not to excess.

Be moderate in all things, except sleep, you cannot sleep too much. Cultivate the sleeping habit, and don't give up until you can sleep ten hours a day.

The Matter of Food.

is important, for, as before stated, nervous peo-

ple eat and sleep too little, fatty foods, or those that are easily converted into fat, are what is necessary. Olive Oil is one of the best nerve foods in existence. Take a teaspoonful at a time, and gradually increase the quantity until you can take a tablespoonful at each meal. The best substitute for olive oil is sweet cream. Celery and lettuce are also good.

Cultivate slow and measured movements, avoid undue activity, take life easy and be moderate in all things.

For a cure, flush the colon, sleep long, eat slowly, and plenty of oily or fat food, exercise freely, but in moderation, develop the lungs by breathing exercises, and take life easy.

This treatment, faithfully carried out, will cure the very worst cases in time.

Headache.

There are many causes for this distressing complaint. Generally it is to be found in the stomach. Something that has no right there is in that organ, and irritating the pneumogastric nerve that connects the stomach with the brain. It is a common symptom of dyspepsia.

An engorged colon is one of the most common causes, on the same principle that it causes paralysis and apoplexy. Stimulants invariably promote headache.

To prevent the attacks, live regularly, avoid late hours, and excessive brain work, shun alcoholic beverages, tea and coffee, avoid sweets and pastries, and anything fried in fat. Eat good, plain food, including bran, whole wheat, fruit (especially oranges), never eat late at night. Develop the lungs. Never let a day pass without gently exercising all the muscles. Massage the abdomen each night before retiring. Keep the colon clean by the use of the "Cascade" and Cleansing Tonic, and bathe at least three times a week.

To relieve an attack, flush the colon thoroughly with the J. B. L. "Cascade" followed by a hot foot-bath, and a cup of hot lemonade —without sugar—so hot that you have to sip it. The application of some of the principles of Zone Therapy may be very helpful. Press the thumb or the metal handle of a table knife on the roof of the mouth — the hard palate — immediately under the seat of the worst pain.

Maintain this firm pressure for from five to eight minutes. This will usually clear up a headache.

Dropsy.

In Dropsy the outlet to the intestinal canal has become clogged. The Heart and circulatory system is overworked. The kidneys wear out trying to evacuate the bowels through their delicate tubular network, and the capillaries have become helpless through misuse in trying to do the work of others. So the tissues and muscles of the extremities are loaded with this cast off material, and we call it bloat.

Treatment.

Use the "Cascade" and the Cleansing Tonic at least twice a week, making the flushings thorough and complete. In addition a daily Turkish bath, will open up the pores of the skin and induce perspiration. If too weak to take a Turkish bath, give the hot wet sheet pack, as prescribed for Scarlet Fever. The Turkish bath, however, is by far the best, as the system is loaded with too much water, for which the profuse perspiration induced by this

dry sweating process affords marked relief.

Eat as little as possible, and let that be dry toast, thoroughly masticated. Tea or coffee should be avoided.

Appendicitis.

Was early known as inflammation of the bowels, and may be caused by injury. It is an inflamed condition of the appendix, but the inflammation may have extended from the colon or from the peritoneum. The most frequent cause is the caecum (the lower pouch of the colon) getting filled with hardened fæcel matter, in which case the ileo caecal valve is obstructed, and the natural passages of the bowels stopped. With a clean colon appendicitis is practically an impossibility.

Treatment.

Use the "Cascade" with a double or even a triple portion of Cleansing Tonic promptly on the first sign of an attack, injecting all the water possible (at a temperature of not less than 102 Fahr.), so as to reach the caecum, where the trouble is located. If the attack is

an acute one, use the "Cascade" every third hour until relieved. If the obstruction (which is usually present) does not give way, inject a pint of hot water and a pint of castor oil mixed; but before injecting it raise the hips several inches higher than the head; then turn on right side, and stroke the reverse way of the colon, applying a firm but gentle kneading movement in the region of the appendix. This injection should be retained at least half an hour—longer if necessary. If this does not break loose the obstruction, resume the use of the "Cascade." Hot fomentations over the appendicular region are valuable. After the bowel has been emptied have absolute rest, and if there is much pain and inflammation present, apply cracked ice, in a rubber bag, over the affected part. The diet should be absolutely liquid until all danger has passed. This is of the highest importance. In every instance in attacks of Appendicitis the services of a good and reliable physician should be obtained if no relief is obtained. This is important and imperative.

Diseases of the Liver.

Liver complaints are always closely related to other diseases of the digestive organs. The colon being clogged, the intestines are rendered sluggish, which in turn acts upon the duodenum, or second stomach, and prevents the food from properly passing out—then fermentation takes place. Bile is poured out on the accumulated food again and again, for the presence of anything in the duodenum is a demand for the secretion of bile. As a result too much bile is mixed with the food to be absorbed—the blood becomes tainted with biliary secretions — showing itself in a yellow skin, dizziness of the head, dull, sleepy condition and lack of ambition. This overtaxing of the organ results in what is known as acute congestion, symptoms of which are tenderness to touch and a feeling of painful tension on right side just above the edge of the ribs, slight jaundice, furred tongue, loss of appetite and scanty, high-colored urine.

Treatment.

Open the colon by the use of the "Cascade"

and the cleansing Tonic, when the intestines and duodenum will be in turn relieved, then open up the pores of the skin with baths and allow Nature to expel the waste from the system in that manner. The wet sheet pack will be found specially valuable.

An unnatural appetite often accompanies bilious attacks, but it should be resisted. Eat sparingly of bread and milk, slightly salted, for two or three days. Take more vegetables and fruit acids but once a day for a week or two. Any exercises that call the muscles of the stomach into play are beneficial and should be practiced daily, especially horseback riding and rowing. Exercise by bending forward, trying to touch the toes without bending the knees; at the same time taking a deep breath—putting the liver as in a vise, thus inducing active circulation.

The "Bear" walk, or walking about the room on all fours without bending the knees, is one of the best exercises for a torpid liver that can be imagined.

Diseases of the Skin.

Usually have their origin in constipation,

therefore the first thing to be done is to relieve this condition of the colon by daily use of the "Cascade" and Cleansing Tonic. Bathe the body daily in tepid water, being careful not to use soap that will irritate the skin. Dr. Tyrrell's Skin soap is advised. Never use common soap nor any of the highly perfumed varieties. An occasional wet pack sheet is of great value. Attend carefully to the diet and avoid all foods fried in fat.

Diseases of the Kidneys.

Are caused by irritation brought about by those organs being forced to do work which does not properly belong to them.

Congestion is the first step towards chronic or acute inflammation. The second stage is a breaking down or degeneration of the kidney cells. If degeneration has passed a certain point, there is no hope.

Treatment.

The only possible cure is to remove the cause. The colon, intestines, stomach and skin must be got into good working order, so that they will do their own work and relieve the kidneys—of

unjust burdens. The colon should be constantly and copiously flushed with the "Cascade" and Cleansing Tonic, and warm baths frequently taken. The Turkish bath is valuable as described in this book.

Every night after flushing the colon inject a pint of warm water and go to bed. It will pass off through the kidneys, cleansing them. If there is acute pain, repeat the injection every two hours until relieved. Hot fomentations applied to the back, over the region of the kidneys, will relieve the pain, and gentle massage in the same locality will be found beneficial.

Avoid sweets, pastries, starchy foods, potatoes, alcohol, tobacco, tea, coffee and overfat foods. The diet recommended for dyspepsia is good. Skim milk, buttermilk and whey should be used freely, as they exercise a very beneficial influence on the kidneys. A wet compress worn over night will help draw out the poisonous waste matters.

Peritonitis.

Is an inflammation of the membrane cover-

ing the bowels, and is frequently caused by concussion or injury; sometimes it extends from adjacent organs, but in many instances it is caused by the breeding of germs in the hardened fæcel accumulations in the colon.

No matter what the cause may be, flush the colon vigorously with injections as hot as can be borne, and place bags of hops, steeped in hot vinegar, on the outside. This will soon reduce the inflammation and effect relief. The Cleansing Tonic is an immense aid in this condition. In peritonitis the same as in appendicitis always call in a physician, as the disease or condition is treacherous and dangerous. Try to secure the best one available.

Pneumonia.

Sometimes called Lung Fever, is an acute inflammation of the lungs, usually caused by a cold, and commencing with chill and feverish symptoms. First there is a dry cough and the brick dust sputum, and in the advanced stages a peculiar dark tint in the cheeks, the mahogany flush. Breathing becomes very hurried, rising as high as forty respirations per

minute. An exceedingly rapid and frequently fatal form of disease.

Treatment.

Promptitude in dealing with the case is of the highest importance. If the colon had been kept clean and the lungs developed by exercise it could not have attacked you; therefore the first thing to be done is to use the "Cascade" with the Cleansing Tonic. The circulation must be equalized by drawing the blood to the skin and extremities and a Turkish bath (see end of book) will do the same to the skin. If too weak substitute a hot bath. Put patient to bed immediately and apply a hot compress over the lungs, wrung out of hot brine, changing it as often as it gets cool. Give little, if any, food during the continuance of the disease, and that should be extremely light and nutritious. Poultices of Denver Mud or Anti-phlosgistine, mustard plasters, etc. are indicated but if available the services of a physician should be retained at once.

Bronchitis.

An acute inflammation of the bronchial

tubes, or air passages, and treatment is almost identical with that for pneumonia; only applying the hot compress to the throat or chest, according to which part exhibits the most soreness. If the throat is very sore use the following gargle. Bichromate of potash (pulverized), one drachm; tincture capsicum, half ounce; pure water, two tablespoonfuls. Shake until dissolved. Add one teaspoonful of this mixture to three-fourths of a tumbler of water and gargle the throat every hour until relieved—then every two hours until well.

Asthma.

A most distressing complaint, and hitherto imperfectly understood. It has been attributed to innumerable causes, but is largely due to an engorged transverse colon, which, interfering with the free action of the diaphragm, withdraws that amount of impetus from the lungs, so that they fail to respond to nerve stimulation. In numerous cases where the colon was emptied, the trouble disappeared and no trouble was experienced so long as the colon was kept clean. In all cases of asthma the

last meal should be a light one, if taken at all; in fact, it would be well to follow the dietary rules for dyspepsia, and in addition omit the evening meal.

Drowsiness, Heavy and Sleepy.

Old people are more prone to this because the amount of blood that circulates through the brain is too small. Old people should be permitted to drowse freely. They thereby regain their strength. Young people who are weak and bloodless and consequently drowsy, should cultivate fresh air and good food, and take pains to preserve the general health in every possible way.

Try a semi-fast for three or four days, eating only oranges and drinking plenty of water with a daily use of the "Cascade" and the Cleansing Tonic at night, accompanied by a limited diet of natural vegetable and fruit foods, together with the regular exercise. Tepid baths and deep breathing exercises. Avoid overclothing the body, and heavy foods and meat.

Pyorrhea.

Most people dig their graves with their teeth. Keeping the mouth and nose free from infection will prevent half of the ailments which affect the human body.

In infancy and childhood maintaining the mouth and throat in a pure, clean condition is an important aid in the prevention of digestive disturbances, teething troubles and tonsilitis.

The mouth and nose form the entrance of many diseases, among the more common of which are influenza, tonsilitis, pneumonia, tuberculosis and sinus infection.

Tonsilitis frequently results in heart disease, rheumatism and general debility.

Of the diseases which affect directly the gums and teeth themselves, Pyorrhea Alveolaris, also called Rigg's disease, and abscesses of the teeth, are the most prevalent.

Three factors play a most important part in the cause of Pyorrhea; the formation of tartar about the base of the teeth, which offers a fertile field for the growth of microbic infec-

tion; the presence of active, infectious micro-organisms in the mouth; the weakened, non-resistant condition of the gums.

Pyorrhea gradually appears as a red line near the margin of the gums. Next the gums feel spongy and tend to bleed easily, then they recede from the teeth which in turn begin to feel loose. If the disease is not checked at this stage, pus pockets are formed and the roots of the teeth become affected. As the disease progresses the formation of pus becomes worse and eventually may result in falling out of the teeth. There is little or no pain noticeable. A bad taste in the mouth is usually present.

When the disease has reached the pus stage absorption of this poisonous material into the system takes place, giving rise to rheumatism, stomach and intestinal disorders, anemia, eye, and ear trouble, and various throat infections.

Pyorrhea in spite of all efforts on the behalf of dentists and doctors, remains very hard to cure and has a tendency to remain permanent in a semi-active, chronic state.

Treatment to be effective should be preceded by a thorough examination and over-

hauling by a dentist. Then the mouth, gums, teeth, and throat should be put in a state of absolute cleanliness.

Abscess of teeth are caused by infected teeth and gums and is generally not noticeable except by X-Ray. Small pockets of pus gather at the roots and as these cannot be opened, the body absorbs it and the pus saturated blood current carries the toxemia to all parts of the body bringing about rheumatism, heart disease, and a general ill health without definite symptoms. The treatment is extraction of teeth.

Modern medicine tends to prevent rather than to cure. If prevention is carried out, remedies and treatments become unnecessary. The only sane, sensible thing to do is to take care of your teeth and gums while they are still healthy. Many days of discomfort, suffering and expense may be avoided.

To keep mouth, gums and teeth in good condition the following rules will be of great service:

Go to a reliable dentist and have your teeth attended to. Visit a dentist twice a year for

cleansing and examination, frequently examine your teeth yourself and see if any suspicious dark areas show on the enamel, or red lines on the edges of the gums.

Use dental floss between the teeth once a day —but gently—and be careful not to injure the gums with it. Employ a fine, waxed, silk floss and hold it between the thumb and index finger of each hand. Place it in the crevices between the teeth and exert gentle pressure. Do not push it against the gums. Use a long enough piece of floss so that a new section enters each crevice.

Keep at least two or more tooth brushes in service using them in rotation. Old toothbrushes are worse than no toothbrushes at all. Brush your teeth with an up and down or circular motion of the brush away from the gums, the first thing in the morning and the last at night.

Look after the rest of your body. Practice cleanliness by use of the J. B. L. "Cascade." Eat the right foods, sleep in well ventilated rooms, exercise and drink plenty of pure water between meals.

Constipation.

This condition has been so frequently referred to already that further comment upon it may be deemed unnecessary. Its causes are varied, insufficient exercise in the open air, hastily eaten and imperfectly masticated food. Many articles of food tend to induce the evil of habitual constipation.

Avoid everything in the form of drugs, for they are injurious in the highest degree. The continual excitation of the excretory processes by the use of cathartics is a most pernicious practice and should be shunned.

The "Cascade" should be used each alternate day, for at least two weeks, then, twice a week, until improvement is assured. Drink a tumblerful of hot water, not less than half an hour before breakfast, and eat freely of fruit at that meal. Also partake liberally of good, green vegetables at other meals. Eating whole-wheat bread and bran is of decided assistance, and make it a rule to drink two quarts of water each day between meals. The regular use of the Cleans-

ing Tonic is very important in the treatment of chronic constipation — as it tones up the bowel muscles and strengthens the nerves of the intestines, thereby overcoming costiveness.

Constipation is a disease of civilization. Wild men and wild animals no not suffer from this malady which is perhaps responsible for more human misery, mental and moral disaster, than almost any other cause that can be named.

In every case of constipation some particular condition is the *immediate cause of the dedelayed intestinal movement.* In practically all cases this can be readily removed by change of the intestinal flora, increase of the bulk of the food or by other available means.

In colitis (inflammation of the colon membrane) bran is of signal benefit. It is most important that the mucous membrane should be kept clean. Long continued inflammation causes degeneration of the mucous membrane that produces the lubricating mucus. The intestinal flora (micro-organisms) should be changed and the membrane kept clean by a laxative diet, if necessary by the daily use of the enema such as the J. B. L. "Cascade" treatment.

The use of the enema is a wise measure in a large percentage of cases if properly guarded from abuse.

Bran in Constipation.

Bran has many very important advantages over agar, being cleaner and much cheaper. In addition it has the desirable quality of not packing, while agar is indigestible, non-irritating and increases greatly in bulk in the presence of moisture. As impaction of the colon contents in chronic constipation is the most serious condition to provide against, it has been demonstrated that a substance like bran, which disintegrates the contents of the colon, and at the same time greatly increases their bulk, performs a service not secured from Agar. In addition the disintegrated mass does not lie closely against the wall of the intestine like agar and therefore is not so much subjected to the loss of its moisture by absorption, a very important point. Its proper and successful use is to take bran in ample quantity after each meal instead of once a day.

"While bran is a form of almost indigestible carbohydrate endowed with considerable laxative value, not only because it adds by its bulk to the distention of the intestines but also because of the spicate shape of its particles, excessive irritation does not result from these, because when properly moistened and heated, it becomes soft and pliable and produces merely a gentle action and can be used by patients who have a tendency to colic."

Leading Authorities on Constipation.

Foges of the Rudolfinerhaus Hospital Clinic of Vienna claims that 90 per cent of women above the age of 25 are so afflicted. This eminent physician says: "Intestinal Stasis, in one form or another (constipation), afflicts three-fourths of the American people whether we want to believe it or not," and is the Greatest Single Physical Ill that Besets the modern civilized, highly specialized, artificial human existence."

Constipation, one of the gravest physical disorders of civilized man, has been truly called "the mother of diseases," we are in-

formed by so eminent an authority as Sir Arbuthnot Lane, Consulting Surgeon of Guy's Hospital, London and probably the leading English abdominal surgeon, who claims that the average physician considers the subject unworthy of special study until pain or some form of acute disease intervenes.

John Harvey Kellogg, M.D., Battle Creek, Mich., says: "Constipation is a disease of civilization. Wild men and wild animals do not suffer from this malady, which is perhaps responsible for more human misery and mental and moral disaster than any other single cause. As a rule maladies beginning abruptly are accompanied by constipation. Large masses of mucus in the form of whitish or yellowish shreds or flakes, are due to colitis, a catarrhal condition of the large intestine, believed to be caused often by the free use of cathartics.

It is more than probable that colon poisons resulting from the putrefaction of meat residues in the colon are the most active of all causes of arterio-sclerosis. Dale showed that a poison found in decaying meat acts like supra-renal extract and raises the blood pres-

sure at once from 110 to 260. Hence the great importance of a low protein and fleshless diet in these cases.

Biggest Dividends in Life Paid by a Healthy Colon.

A famous surgeon lays great stress on the fact that failure of the nearly twenty-eight feet of small and large human intestine to function properly is the primary cause not only of much ill health but of a very considerable number of organic diseases.

Sir Arthur Keith, of the Royal College of Surgeons, London, one of the highest authorities on the evolution of abdominal organs, says: "One of these organs that is often displaced is the transverse colon which frequently sags well below the navel and sometimes reaches the floor of the pelvis owing to the load of effete material it is required frequently to carry."

Otto Folin, professor, Biological Chemistry, Harvard Medical School says, "The average man with ordinary habits of diet consumes more food from animal sources than the body

can possibly use. The excess is not stored because the need of nitrogen is so small that an excess is always present in food not rich in that element."

"It has been said that the regular use of enema is always harmful. This belief is, however, erroneous," Hurst says, "In many cases of dyschezia (impaction at lower end of colon) it is the only means which can result in complete recovery." Hurst knew an M.D. 71 years old, who never failed to obtain an easy evacuation every morning for 24 years by means of enemata of three pints of soap and water. (Hurst, "Constipation.")

Henry M. Field, late professor of Therapeutics at Dartmouth Medical School, in the Boston Medical and Surgical Journal says he is continually surprised at the mistake people make as to the completeness of defecation. This error is frequently practiced regularly by persons who are very particular as to personal cleanliness in all other matters. It is almost a regular experience to find in cases of stasis located in the lower end of the colon (dyschezia) that from one-third to one-half of

the contents that should be expelled are left behind.

Case says that when dyschezia is present it seems unreasonable to administer a laxative which will irritate twenty-five feet of bowel in order to evacuate the last twelve of fifteen inches of the colon. Here enemas are indicated. A small cool enema is often enough to produce a thorough evacuation of the lower bowel.

Hurst in Latham and English "System of Treatment," an English publication of excellent repute says, "The most important part of the treatment of dyschezia is to keep the rectum and pelvic colon empty so that they may in time regain their normal tone. This can be accomplished by the regular use of enemata (plural for enema). Even in the most obstinate cases the ultimate result is often very satisfactory although the enemata may have to be given regularly for a year or longer before the rectum and pelvic colon return to their normal condition.

In very exceptional cases the atony (loss of tone) paralysis of the rectum are so complete

that recovery is impossible. In such cases treatment by enemata, though it does not cure, is the only way to procure a regular evacuation. Upon complaint by a nervous patient of exhaustion, or abdominal pain after an enema has been administered, it should be given at bedtime, instead of in the morning."

Eye Strain.

Eye strain which may be due to too much reading in a poor light or to going too much to the movies. Perhaps there is a defect in your vision. You may need glasses or the ones you have need changing. A lens that was perfectly adapted to your vision, five years ago will be absolutely unsuitable now. Consult a reliable optician occasionally.

Unless you are sure there is a positive eye strain do not use an eye wash and then only on advice of a physician. Cloths wrung out in hot water should give relief supplied at several minute intervals at night allowing same to remain on a minute or two. This releases the muscles from their contracted position and rests and soothes them. Repeat on arising

followed by cloths wrung out in cold water. Constipation plays a vital and important part in eye strain as the poisoned blood carried to these organs from intestines clogged with effete matter further aggravates the condition.

Intestinal Stasis Affects Eyesight.

Ernest Clark, the eminent eye surgeon of Downing College, Cambridge, England on degenerative changes in the eye says, "That although not generally recognized, the eye is an organ that registers in a very delicate manner certain conditions of the system, and amongst them intestinal toxemia is markedly one. The hardening of the lens may be delayed by the absence of, and accelerated by the presence of, certain poisons in the system, and intestinal toxemia takes a very high place in the list. One individual has an accommodative power of only 2½ diameters while another of about the same has 8½. What is the difference between the two? In the first the lens has hardened prematurely and is only equal to the lens of a man of 55. That is, he is suffering from premature old age and, in the great majority of

cases, in physical appearance, habits and powers, he is aged 55. There are many cases which advance this premature senility, but the factor common to a very large majority of them is "intestinal stasis." On the other hand, those whose accommodative power is higher than normal look much younger, and on going into their history it will be found invariably that they have taken the greater care to avoid the least suspicion of "intestinal stasis." This premature senility of the lens is another proof of the truth of the old saying that a man is as old as his arteries; the premature hardening of the blood vessels often taking place at the same time as the process in the lens.

Commenting on the observations of Clark, Kellogg cites three of his own cases. A young woman of 18 found her sight failing. She needed glasses usually worn by persons of 50. By a change of regimen and improved bowel action the abnormality in a few weeks disappeared.

A professor of 50 wearing glasses adapted to physiological long sightedness of advancing age, after following a changed regimen for a

few months, found that his eyes improved to such a degree that he had the same range of accommodation as a normal person of 50.

Brain Fag—Nerve Exhaustation.

Brain fag and worry. Worry seems to be an inevitable consequence of modern life and has the most devastating effect on the health. Men who have had no ill-effects from years of overwork have been broken and wrecked by a few weeks of worry and anxiety.

The demands of the present day living and business conditions tend to increase the number of cases of this disease which coupled with errors of diet and the consequent constipation make the condition seem nearly incurable. If, however, the patient is put upon a 100% vegetable and fruit diet with daily "internal baths" by the aid of the "Cascade," avoidance of all business and needless cares, sleep in a well ventilated room or outdoor porch, mild outdoor exercise, pleasant surroundings and perfect internal cleanliness, there is always a cure.

Colonic Irrigation.

The coloclyster or colonic irrigation also af-

fords marvelous relief in a class of patients, by no means small in number, who, suffering from atony (lack of tone) and dilation of the colon (frequently from taking warm enemas without following them by cool enemas as a corrective), are always carrying about with them an enormous accumulation of fecal matter. These patients are variously classified as neurasthenis (nerve exhaustion), hypochondriacs (morbidity and moroseness with exaggerated attention to body conditions), simple dyspepsia, etc., and are treated for biliousness, insomnia, exhaustion and a multitude of ailments, by various needless medicines, when all the conditions are the simple and inevitable result of chronic intestinal intoxication which is promptly relieved by a cleansing bath administered to the colon. The quantity of fecal matter removed in these cases is sometimes enormous. Not infrequently quantities of old putrefying masses, semi-hardened by long retention, make their appearance after a free coloclyster has been thoroughly administered every day for a week or more, showing that a single irrigation of the colon, no matter how

thorough, is not sufficient. In this class of chronic cases the coloclyster should be administered daily for two or three weeks if needs be, or as long as the patient complains of gaseous distention and flatulence. After the discharge of the warm water first used at a temperature of 92° to 95° (the body temperature is 98.6° F.) one to two pints of water at 60° to 70° should be used and retained as long as possible as a tonic bath to the colon. In every case two to four tablespoonfuls of the Cleansing Tonic should be added to the water.

For water to reach the splenic flexure after defecation (it seldom should be used before) it should be introduced (at a temperature of 80°,) in any amount up to two pints, while the body is, *in an upright position,* and a recumbent position on the Left Side then assumed for a few minutes only. If there is any uncomfortable reaction to the water at the above temperature, which is not probable, the temperature can be raised slightly, even to 90°, as indicated by a thermometer dropped into it, slightly above the body temperature. But in such cases a last enema should drop back to

80°, or even lower, in order to give the bowel the tonic effect of the cool water, as it is not uncommon for a considerable and very annoying chronic distention of the bowel to result from too warm enemas.

The cold enema gives rise to strong contractions which are often accompanied by colic. A hot enema cannot be given at a temperature more than a few degrees higher than the body, whereas the cool injection can, on proper occasion, be used without danger. The former is used for its sedative effect or over-activity in cases of colic. (Kellogg)

The non-injurious effects of the wise use of the enema and its differentiation from the coliclyster (colon irrigation), with some basis in authority; the seriousness of the menace of incomplete defecation.

Kellogg claims to have saved the lives of a number of persons suffering from suppression of urine by the employment of the hot enema at a temperature of 110° to 120° at periods varying from three to four hours. He has used the hot enema for this for more than 20 years. For pain in the bowels such as in-

testinal, renal (kidney) and hepatic (liver) colic, enteralgia (pain in the bowels) and hyperesthesia (excessive sensibility) of the abdominal ganglia (subsidiary nerve centers) it is highly useful in a large proportion of cases. Kellogg, "Colon Hygiene," and "Rational Hydrotherapy."

If one considers primitive life many instructive facts will be ascertained. Primitive man lived on the open and ate coarse food and of few varieties. Our modern dietary, especially of the well to do is adapted more to the palate than the digestive organs. Heavy desserts, pies, cakes, marmalades, meats, gravies, and dressings of various kinds are favorites together with an indolent existence and poor ventilation. Primitive men not only lived in the open but were continually moving, stooping, constantly picking up things and thus continually exercising his abdominal muscles several hundred times a day. He was throwing stones, climbing trees, running, that forced deep hard breathing. At night he was eager to lay in the open to rub his tired muscles and sleep soundly. Henry M. Field—M.D. Pro-

fessor — Therapeutics, Dartmouth Medical School says, "Persons of 20 to 40 who find themselves awaking with headaches, frequent colds, coated tongue, lack of appetite, weakened efficiency and constant constipation attacks, the first course to be pursued, according to leading authorities, is to simplify the diet and adopt a proper regimen of diets given in detail under Diet. One to three glasses of water in the morning on arising is generally sufficient. Examination of the abdominal muscles will generally find them flabby. This condition shows lack of necessary propulsive power for defecation. This is an important factor in abdominal physiology.

Drinking Water Before Breakfast.

Many people can bear three glasses of either warm or cold water an hour or more before breakfast without the slightest discomfort. This volume makes a prompt impression on the colon at a time when the small intestine is empty and peristalsis is renewed with the eating of breakfast. Or two glasses of cold water can preferably be taken, to be followed

in five minutes by a glass of warm water. This method secures the stimulation of the cold water before the warm is taken. Such an early morning washout of the stomach not only relieves that organ of any overnight fluid residue, possibly aciduous, referred to by Hawk as a frequent condition, but relieves the kidneys by diluting the blood.

Baruch's law: the effect of any hydriatic procedure (use of water) is in direct proportion to the difference between the temperature of the water and that of the skin; when the temperature of the water is above or below that of the skin the effect is stimulating; when the temperatures are the same the effect is sedative (quieting). Stedmans Medical Dictionary.

In rheumatism, the copious drinking of water is useful in diluting the blood so that it can dissolve and carry out of the body a larger amount of waste matters. As a means of encouraging activity of the skin and kidneys diluting the urine free water drinking, not only promotes the elimination of excess sugar in the blood in diabetes but lowers the specific

gravity of the blood and aids in the elimination of acetone (found in the blood in diabetics) and diacetic acid (sometimes associated with diabetes). In insipient diabetes the disposition to drink large quantities of water should be resisted to a moderate extent, water being taken only when the thirst becomes very intense. In fevers, water drinking aids the kidneys and skin in eliminating body poisons to which the rise of temperature is due, in aiding the liver in its work of destroying fever poisons and promoting the reductions of temperature by causing increased evaporation from the skin.

Diet in General.

The important thing in keeping well is to eat the right kind of food combinations. Food which in itself is wholesome, may yet be harmful from lack of properly balanced constituents. An insufficiency of vegetable food, and the preponderance of salt fish and meat, produces scurvy while anemia (deficient and defective blood) may result from deprivation of animal food. Rickets and scrofula result from

defective feeding of infants, eczema and other skin diseases from an over-nutritious or too concentrated diet, and rheumatism from too much meat or animal food. Whole wheat bread and butter is a fine food combination, the bread containing carbohydrates (sugar and starches) and proteids (albumins) and the butter containing the fat—a perfect diet, capable of sustaining healthy life indefinitely. In pork and beans, we have another rational mixture of the nitrogens and albumins with fat.

A meat breakfast should be indulged in only by those who labor with their muscles—it has no place with those of sedentary habit. The meat breakfast is an American habit. A meat breakfast in hot weather is doubly an evil. Too much meat seems to be the American rule. In hot weather a noonday meal of cold bread and milk prepares one much better to resist the effects of heat than a meat dinner followed by rich deserts. The one is cooling, the other is heating to the blood.

External and internal bathing should be practiced regularly.

It is more hygienic to eat the acid fruits

with meats such as cranberries with turkey, and apple sauce with pork and goose. When the system gets in a condition where acids are craved, fruit acids are much more wholesome than vinegar or other manufactured acids.

A mixed diet is the wisest. More trouble comes from overeating than from what is eaten. Regularity in eating and the avoidance of eating between meals is favorable to an appetite; while if there is absolutely no appetite for a given meal, don't eat, but fast and wait for the next meal.

Piles or Hemorrhoids.

Is a disease of the rectum and muscles of anus, and is the direct result of constipation. The accumulation of hardened fecal matter distends the sigmoid flexure, causing inflammation, until from its own weight it falls down, producing prolapse of the rectum. Frequently ulceration follows and the rectum is pressed out, tumors forming on the protruding portion.

Bleeding piles are caused by congestion of the rectal blood vessels. The constant nerve

irritation causes muscular contraction, consequently circulation is interfered with, producing a condition of engorgement. Owing to lack of nutrition the structures become brittle and quantities of the varicoses capillaries unite to form pile tumors. The methods of treatment usually employed are, injecting astringents into the tumors to dry them up; ligaturing the tumors, that they may die or drop off, or removal by surgery, the most rational and radical procedure often necessary, but not always successful. Often, despite skilful operations the condition returns because the cause is still operative. At times, also, the operative scars cause trouble because of their unfavorable location. Not everyone can make up his mind to be operated on. For those reasons constant efforts are still being made to control hemorrhoids by bloodless methods, to reduce the discomfort to a bearable state, and to cause the hemorrhoids themselves to shrink as much as possible.

Three principles of treatment apply. The first looks to the regulation of living habits; the second, "Internal Bathing" and the third,

local treatment. When all three principles are carried out properly the result is such as fully to justify the demands on the persistence and energy of the patient.

As regards the general treatment, everything must be considered that relieves the circulation, diminishes stasis, and prevents mechanical pressure on the lowermost veinules of the rectum. Much can be accomplished by proper diet. First, there must be a restriction of meat and an increased amount of vegetables, cereals and bran should be eaten. Moderation is the only cure together with full and free exercise in the open air is indispensable particularly in the case of those of sedative habits.

Sports and gymnatic exercises are further important aids for the improvement of the circulation. It is however, important to have medical advice in order to avoid dangerous excesses. All these favorably affect both digestion and defecation and the latter is of the greatest value. Patient must take extreme care to see that they do not suffer from constipation. Even the formation of hard stools

should be prevented, by use of the "Cascade" daily. Regular, soft, evacuations are absolutely essential to a cure.

If the colon is emptied by use of the "Cascade," the cause is removed and the inflammation will subside and the protruding bowel will be more easily put into its place. Tumors will soon absorb if they are put back when they protrude. Sitting in or over a tub of hot water is very helpful.

The first and prime requisite for local treatment, is that it protects the existing hemorrhoids from injury and infection. This is best done by smearing the rectal region with a sterile lubricant, before defecation, so that the way is made smooth for the easy passage of the fecal mass over the sensitive structures, such a lubricant is found in our J. B. L. Lubricant. The second, the direct healing of the piles, is met by the introduction into the rectum of an easily soluble small amount of J. B. L. Pile Ease ointment applied through a small metal spout or Pile pipe. This brings about a deturgegscence and contraction of the rectal mucous membrane and of the blood vessels.

Third, both above treatments should be accompanied by the nightly use of the J. B. L. "Cascade."

If the condition is such that surgical interference is absolutely indicated great care should be taken that the surgeon consulted is one of the best in his line. It is here that a specialist is needed as the average practitioner is not really capable of properly operating on these important and delicated membranes. Even in the cases when special treatment is available from specialists it should endeavor to eliminate the cautery, the acid cure and the scapel.*

Toning Up Facial Muscles.

The application of ice undoubtedly helps to close up the pores and tone up the muscles after a careful facial steaming though cold baths are just as efficient. To those with an oily skin, the ice treatment after steaming is undoubtedly beneficial. Those, however, who have skins of a fine texture, ice roughens the skin and creates brand new, fine lines. Even

* In cases like this where a rectal specialist is indicated the best is none too good

when cold cream is rubbed into the skin of the face before the ice is used, increasing of wrinkles is the result. If the skin is thin, dry, and rough, avoid using ice applications and try steaming and massaging with some good skin feeding cream. Accompany by the semi-weekly use of the "Cascade" and Cleansing Tonic, a fruit, vegetable and cereal diet and avoidance of soups, meats and fried foods. A glass of hot water into which the juice of ½ a lemon has been squeezed and 3 to 4 oranges a day will accomplish marvels.

Paralysis or Palsy.

These two terms signify one and the same disease; that is, a condition of the system in which the power of voluntary motion is lost. It is the outward manifestation of a deep-seated disease that can frequently be traced to an obstructed colon and consequent disordered circulation. The same causes promote apoplexy. A blood vessel is ruptured in the brain, causing a clot to form, which presses upon the nerves that convey the will of the mind to the muscles, thus stopping their ac-

tion. It is not, as is usually supposed, an affection of the muscles, but of the nerves that control the muscular movements. Sometimes one entire side of the body becomes affected and completely deprived of voluntary motion. Congestion of the brain is a preliminary of paralysis, and congestion of the brain are invariably due to an enlarged transverse colon.

One form of paraylsis affects only certain parts of the body, such as the lower limbs, or the reproductive organs, and is caused by pressure upon some large nerve communicating with the paralyzed portion. This is doubtless due to the pressure of an enlarged ascending or descending colon upon some of the lumbar plexur nerves, or their branches. This, however, refers to what may be termed local paralysis, or paralysis of certain parts.

Paralysis of an entire side of the body is due to pressure on the brain, and is caused by defective circulation, induced by an unnaturally distended colon. While in this condition some severe physical exertion or mental strain increases the pressure beyond the power of resistance and a rupture is the result—when the

patient falls, wherever he may happen to be.

Treatment.

Remove the accumulation in the colon with the "Cascade" and the Cleansing Tonic. Massage is a very valuable part of the treatment. To prevent the muscles from stiffening, and to retain the suppleness of the affected parts, frequent rubbings are necessary, and the mind should be stimulated to resume its control over the refractory muscles. It is necessary to pay particular attention to diet—easily digested, non-constipating food only. You may have to revert to a spoon diet for awhile—and, as the liability to a second attack is great during the period of recovery; special attention must be given to diet to guard against it.

When power begins to return to the affected parts, a system of graduated exercises should be arranged, gradually increasing in force with the return of strength and normal condition. These exercises will gradually educate the mind and restore its harmonious working with the body.

Epilepsy, or Falling Sickness.

Is distinguished from apoplexy, or paralysis, by the convulsive action and foaming at the mouth. One prime cause of this most distressing complaint is the action of worms in the colon. In a number of cases treated by us, knots of worms were expelled, and the exciting cause being removed, complete recovery followed. The preventive treatment is simple. Use the "Cascade" and our Cleansing Tonic until the worms are entirely expelled. During a fit loosen the clothing at the throat and place something in the mouth, a cork, for instance, to prevent the patient from biting his tongue. Some fine salt thrust into the mouth will shorten the duration of the fit.

Great attention should be paid to the diet and very little meat if any should be allowed the patient. Whole wheat bread, bran, raw and stewed vegetables and fruits, and avoidance of fried and rich foods should be carefully followed. In severe attacks do not hesitate to call a physician.

Another prolific cause is self abuse in which case nothing but the abandonment of the habit

and a cleanly life, careful diet and semi-weekly use of the "Cascade" will effect a cure.

Obesity.

A condition of the body, of general engorgement, or, over-fullness. Is the result of excessive eating, or imperfect depuration, or both. Over-eating and inactivity are the chief producing causes. It is especial prerogative of children to be fat, but when too great an accumulation comes, with advancing years, it brings discomforts, disadvantages, and oftentimes fatal diseases, among which are Apoplexy, Fatty Liver, Bright's Disease and Fatty Heat.

Treatment.

Use the "Cascade" and Cleansing Tonic regularly, and take as much exercise as is possible without fatigue. A brisk three-mile walk daily will work wonders in reducing weight, especially if you perspire freely. Drink a pint of hot water an hour before each meal and half an hour before retiring, to wash the sour ferments and bile from the stomach before eating and sleeping. Live principally on roast or

broiled meat, fish, poultry, boiled rice, green vegetables, bran muffins and whole wheat bread. Avoid all soups and drinking liquids at meals.

When one is unable to take the necessary amount of exercise, the dieting process, known as the "Salisbury system," is very effective. This consists of the lean part of good beef, from which every particle of fat and sinew is removed, then chopped to a pulp, made into small cakes, broiled and eaten hot. The reduction of adipose tissue demands a certain amount of self-sacrifice, but the above method, if faithfully followed, never fails to effect the purpose unless due to thyroid disturbances.

Diabetes.

A peculiar and troublesome disease, characterized by an excessive discharge of urine, heavily charged with grape sugar, the saccharine principle of grapes and honey. This substance is manufactured in excess by the body, and eliminated by the kidneys. The discharge of urine is abnormally large, sometimes reaching as high as several gallons daily.

Owing to the presence of sugar in the blood and the secretions, nutrition is affected, and other disturbances manifest themselves. A disease, which, if not taken in time, usually proves fatal, and it therefore behooves one to keep the body in thorough order, and to carefully watch for any abnormality in the urine.

Treatment.

The "Cascade" with the Cleansing Tonic should be used regularly, also the wet sheet pack, to promote the action of the skin, which organ usually exhibits a marked dryness; and its temperature should be varied to suit that of the body. If fairly vigorous, the morning cold bath should be used, for its tonic qualities, or, if weak, then the tepid bath, followed, in either case, by a brisk rubbing, to promote circulation. Diet is most important. All sweets and starchy foods, which are converted into sugar by digestion, should be avoided, while whole-wheat bread, bran muffins, lean beef, mutton and fish, together with salads should be eaten. Acid fruits, such as oranges and lemons, are beneficial. Soft boiled eggs and

milk (in moderation) may be taken. All food should be eaten slowly and a little at a time. The only drink should be pure water, and that never at meal times; but a cup of hot water half an hour before meals will be found of service. Tea, coffee, cream must be absolutely avoided.

Locomotor Ataxia.

Results from sclerosis, a hardening of the gray matter in the motor centres of the spinal cord. Its special symptom is the peculiar high-stepping gait, the power of locomotion not being properly under the control of the will, and when the eyes are closed, it seems impossible for the afflicted person to walk forward without falling. The regular use of the "Cascade," perfect rest, strict attention to diet, and judicious massage has been very helpful in ataxia; but if the case is well advanced, it is doubtful whether restoration to health can be effected.

Nursing Mothers.

Under the above heading, we class the following troublesome complaints: Inflammation of the Breast, Milk Fever, Sore Nipples,

Puerperal Swelled Leg, and Puerperal Fever, or Peritonitis, all of which complaints are practically unknown, under intelligent hygienic treatment.

A simple hygienic mode of life (including careful diet and the regular practice of the "Cascade Treatment" during pregnancy), will not only have the effect of making labor easy, and recovery rapid, but will almost preclude the possibility of any of the above complaints manifesting themselves.

During pregnancy the "Cascade" and the Cleansing Tonic should be regularly used twice a week, by which means the absorption of poisonous waste matter of the system into the circulation is avoided, and the future health of the infant assured. The body should be bathed daily, or a brisk rubbing from head to foot, with a towel every day.

Careful attention to the foregoing hygienic mode of life, during pregnancy, will effectually prevent the appearance of many of those distressing complaints peculiar to Nursing Mothers.

Inflammation of the Breast.

Rarely occurs if the "Cascade" and the Cleansing Tonic is regularly used. The treatment is to use the "Cascade" thoroughly, and apply cool wet cloths, well covered with dry ones, to the breasts. If a surplus of milk, draw it off with the breast pump.

Sore Nipples.

Do not require anything but a little cream or olive oil applied with an occasional application of cold, wet cloths, when they are hot and painful, and occasional fomentations when cracked and sore. Above all things do not fail to "flush the colon."

Milk Fever.

Should be treated by at once flushing the colon, and if the patient is not too weak, use the wet sheet pack (see end of book), otherwise tepid ablutions should be frequently used.

Puerperal Swelled Leg.

Should be treated as an acute inflammation. The colon should be thoroughly flushed, the

wet sheet pack or tepid bath used frequently, and cold wet compresses applied to afflicted limb. The patient may drink cold water freely, and the diet should consist mainly of Indian or wheat-meal gruel.

Fistula.

There are two distinctly recognized forms of fistula, the complete and the incomplete: the latter, having only one opening, either external or internal; if the opening is internal, it is termed, "blind fistula." The complete fistula has two openings, usually, one external and one internal, but in some cases, both openings are external. Fistula is almost invariably the sequel to a neglected abscess, therefore, any form of gathering in the buttocks should be promptly attended to. Fistula may result from an injury; but the large majority of cases are due to a congested or diseased condition of the sigmoid flexure and rectum.

Treatment.

Scrupulous care and cleanliness are indispensable factors in promoting recovery, there-

fore, the colon must be kept absolutely clean, by the use of the "Cascade" and double portions of Cleansing Tonic and parts thoroughly bathed with warm water, at least, once daily. The pipe of the fistula should be thoroughly cleaned three times a day, with the following solution: To half a cupful of warm water, add twenty-five drops of fluid hydrastis and one teaspoonful of finely pulverized willow charcoal. This should be mixed thoroughly and injected into the opening of the fistula, the whole of it, with a small piston syringe. If the opening is not external, then, double the quantity should be injected into the rectum. This practice should be persisted in until the discharge ceases. In some cases, operations are absolutely necessary. All alcohol stimulants should be avoided and highly seasoned foods.

Diseases of Children.

The following simple methods of treating the ailments of childhood will be found remarkably efficacious, easy of application and may be used with confidence.

Croup.

Often runs in families, and is most frequently caused by sudden alterations of temperature. The symptoms are usually a harsh cough, hoarseness, sore throat, and slight fever.

The treatment cannot be too prompt. Use the "Cascade" and Cleansing Tonic quickly, and place the child immediately in a hot bath, and rub the lower limbs thoroughly. Wring a cloth out of cold water, and place it on the throat and chest, covering it with a thick flannel to exclude the air. Change the cloth as often as it gets dry. Keep child in well ventilated sunny room protected from drafts and give plenty of pure water, orange juice and liquid foods.

Whooping Cough.

Whooping cough is both treacherous and stubborn. Unfortunately, many parents do not call in a physician when whooping cough becomes evident. Some cases are either unusually mild or lack the tell-tale whoop or vomiting; these cases are often overlooked even by physicians, and these masked cases may be

more potent in spreading infection than the typical and severe cases; they are not recognized for what they are and many cause great mischief.

Treatment.

The teaching that vaccines and medical measures offer nothing of value is unfortunate and is not entirely accurate. Such teaching discourages the laity from seeking medical assistance. Many physicians of excellent judgment and long clinical experience find pertussis vaccine effective, in a considerable number of cases, as a therapeutic agent if used early enough and in sufficient large dose, especially the severe ones. Moreover, vaccine has a fairly definite value for purposes of immunization of children who may have been in contact with a case of whooping cough. The net result of general indifference and nihilistic teaching is that whooping cough cases run at large to a degree that constitutes a serious menace to the rest of the children of the community. In this, unfortunately, they are sometimes encouraged by physicians. By all means, in whooping

cough, call in a physician and notify the local Board of Health.

In acute cases of illness, we suggest the immediate use of the Cascade, while awaiting the arrival of your family physician.

"An ounce of prevention is worth a pound of cure."

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